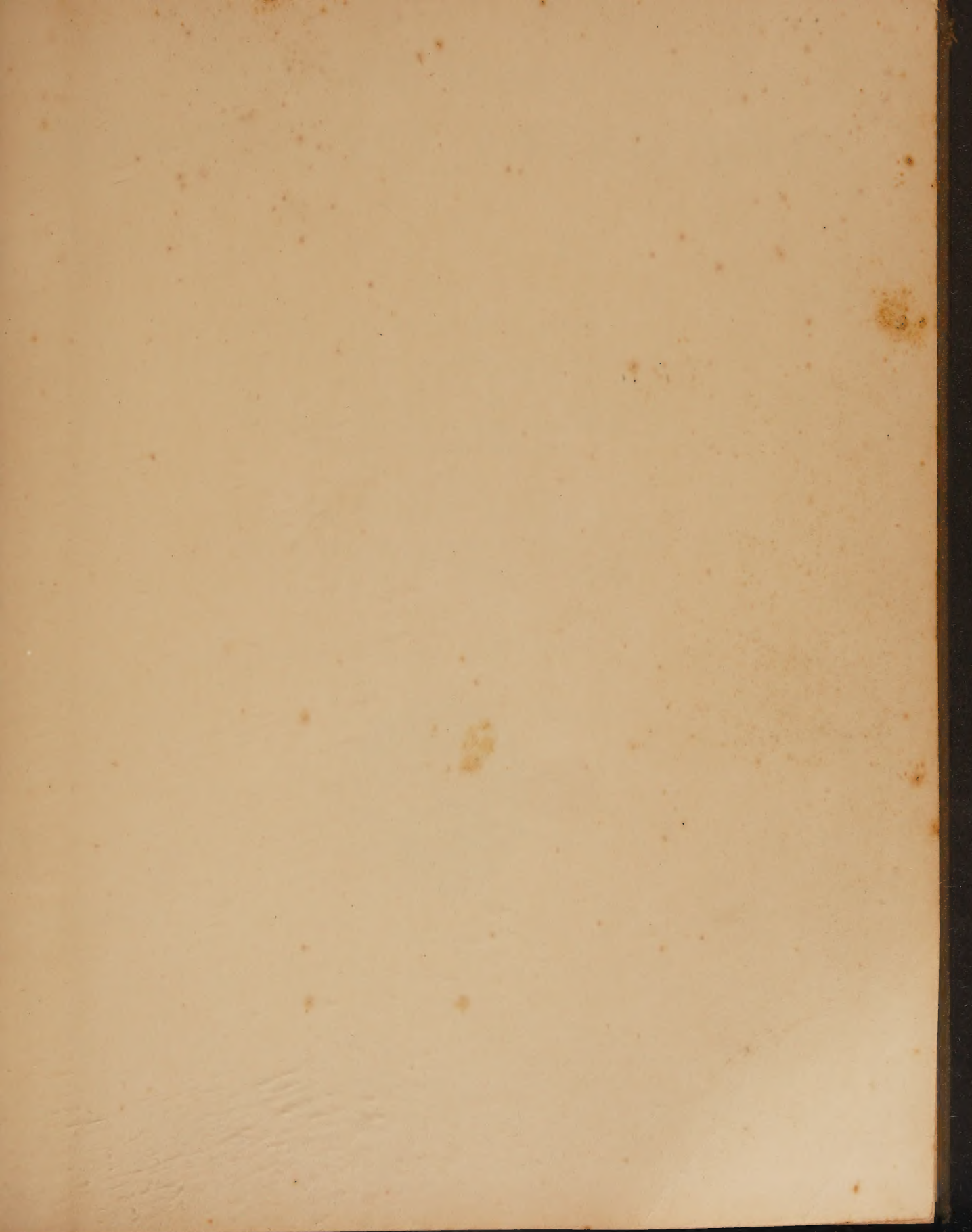


ELEMENTARY GEOGRAPHY



DODGE-LACKEY

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DODGE-LACKEY ELEMENTARY GEOGRAPHY

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THE PREFACE

Society charges the elementary school with the task of beginning the training of the youth of today to be men and women of tomorrow, and demands that in this preparation for adult life each of the great divisions of human knowledge shall be considered. Geography has long been recognized as one of the fundamental subjects in a school curriculum because it is a study of the great earth stage and of the play of life that is being enacted thereon. Its contribution is therefore unique and essential.

We, as human beings, are a part of the stage setting as well as actors in the great drama of human life and civilization. The understanding, then, of what man is doing in the world today and of what he has done in the historic past can be gained only when the life actions are interpreted against the background of the great stage setting.

Geography therefore makes its contribution to the understanding of where people live, what they are doing, and why they are doing what they are. It deals with the earth, with life, particularly human life, and with the relationships between life and its background, and between different portions of the world. These relationships must ever be kept in mind and must be made increasingly clear as study progresses, for they are the very essence of geography. They are the keys that enable us quickly to unlock the doors that lead to an appreciative understanding of the different sections of the world and of their close interdependence.

Geography is therefore a regional study involving the study both of each great area and of the relationships of these areas to one another. Common sense and the principles of good teaching suggest that the point of departure in the teaching of school geography is the home region, to be followed later by a study of distant areas—areas that can be understood only in comparison with the concepts and relationships learned in the study of the home region.

As the study progresses, certain types of relationships learned in the study of the home area and of the more important countries become increasingly familiar by repetition, although they may not be classified or coördinated in the mind of the pupil. Hence the desirability later of bringing these relationships to the front, of reviewing them and summarizing them, in order that they may be used as tools in the study of distant lands and in the more advanced regional study of the continents.

This series of geographies, like its predecessor, is so planned that the above sequence may be followed by teachers, whatever special methods of teaching are used. A textbook, however, is not necessarily a course of study, although it should be possible to use it as such. Neither should it be an outline in special methods, although it should be easily adaptable to any of the approved methods of teaching. The teacher who uses this series will find that all the important activities involved in the learning of geography have been kept in mind by the authors and have been amply provided for in the text. The suggestions at the beginning of each section of the text, entitled "Some Things to Learn," and at the close of each section, "Some Related Problems" and "Some Things to Do," together with the numerous map problems, will all be found to make the text itself more usable and more teachable.

This series of geographies follows, therefore, the general plan of organization that has been approved through the many years of test to which the preceding series has been so widely subjected, and which modern studies in educational methods have approved as being correct. The texts in this series, however, bring out for the first time many fundamental relationships that are essential if geography is to make its maximum contribution to the intellectual development of our youth.

Geography is both a science and a humanity, to use a time-honored phrase, but as a humanity it must be scientific, and as a science it must present a human appeal.

Many of the human relationships so significant in modern geography have been in the offing for years. The simpler and more significant ones are organized and developed in the earlier book, so that they may be used effectively both as everyday tools and as a means of bringing added insight and understanding in the later years of work. These generalizations, usually called the *principles of geography*, will be found increasingly valuable as the years go on and as they are used in the interpretation of problems of greater complexity and human significance. When permitted to function in this way, geography becomes one of the most vital and worth-while subjects in the elementary school.

Every teacher, however, should bear in mind that geography is not a static but a vibrant subject—that it is full of inspiring action and hidden beauty to those who because of their training can see with an understanding eye the stage and the actors in all their varied relationships. To the youth who, while learning some of the relations between human activities and earth conditions, may catch a glimpse of the great beauties of this appealing science, this series of geographies is dedicated.

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A scene in Zion National Park, Utah. This is one of the many picturesque canyons that are characteristic of the high plateau regions of the west. In early days the settlers used this canyon as a refuge from Indians.

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ELEMENTARY GEOGRAPHY

PART I

HOME GEOGRAPHY

WHAT HOME MEANS

1. THE HOME OF THE BEDOUIN

SOME THINGS TO LEARN

1. The kind of a country in which the Bedouins live.
2. Why plants and animals are so scarce in a desert.
3. What makes an oasis.
4. Why a Bedouin is so dependent on his animals.
5. Why he lives in a tent.
6. Why he must be a good fighter.
7. Why the camel is his most useful animal.
8. The value of the oasis to the Bedouin.

Where the Bedouin lives. In a far-away country live an interesting people known as the Bedouins. Every day in the year in

that country the sun climbs high into the sky. The days are always hot, but the nights are so cold that warm blankets are needed to keep one comfortable. In that country there is very little rain.

The land in some places is rough and rocky. In other places it is covered with fine sand that is easily blown about by the winds. In a few places streams flow down from the higher lands, but the dry, thirsty sands quickly drink up the water from them. This dry land is known as a *desert* (Fig. 1).

The plants and animals of this land. In hot, sandy lands, where there is little rain, few plants can grow, and we say the country is barren. One may travel for hundreds of



Ewing Galloway

FIG. 1. The desert land of the Bedouins. Here is a picture of a desert with a band of Bedouins traveling to find a good pasture where their camels can feed. Why is grass so scarce? Why would you expect but few wild animals to live in such a country? Do you know what a group of desert travelers or merchants is called?



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FIG. 2. An oasis in the desert. The Bedouins like to pitch their tents near an oasis. What do you see that shows this to be a good place for a camp? What kind of palm tree grows in the oasis and furnishes food?

miles through some parts of the country and not see any grass—only hills of drifting sand that reach as far as the eye can see. In other parts, where a little rain falls, some plants may thrive for a short time, but soon they wither and die from thirst. There are, however, a few low places in the desert where water comes to the surface. Here grasses



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FIG. 3. A meal in the desert. The desert is not an easy place in which to secure food and clothing. List things the people may have at a meal. Why do they wear loose clothing and a head covering for the hair and ears? Is there any reason why the Bedouin keeps his gun close at hand?

and trees may grow in abundance. Such green, fertile places in a desert are called *oases* (Fig. 2).

In a country where few plants can grow, scarcely any wild animals can live, for they depend on plants for food. Under the skillful care of the Bedouins, however, horses, camels, sheep, and goats thrive, even in these desert places.

Why the Bedouin lives in a tent. In a country where grass is so scarce, animals must often travel long distances in order to find enough to eat. So the Bedouin must continually move from place to place. He must have a house that he can pick up quickly and take with him as he follows his flocks and herds. For this reason the Bedouin's home is a tent.

The material for the tent is usually woven from goat's or camel's hair. The tent is divided into two parts with a curtain. One part is used by the women and children, and the other by the father and his friends. During the time of the year when a little rain falls, the animals may be taken far into the desert. But when there is no rain, the Bedouin moves his flocks to the hill or higher regions where grass for his animals is more plentiful.

Of course, the Bedouin has only a little furniture—such as chairs, beds, or tables—for such things could not be moved easily from place to place. Blankets, rugs, and household articles that can be loaded easily and quickly onto the back of a camel are better suited to his needs (Fig. 3).

The food of the Bedouin family. Grain, fruit, and vegetables grow only in the oases. So the Bedouin must carry some of his food with him and must depend on his animals to furnish much of it. From his camels he gets milk and from his goats he gets milk, butter, and cheese (Fig. 4). The sheep and also the goats furnish meat. These products the Bedouin trades with the dwellers in the

oases for grain, figs, dates, and olives. Some other foods, such as peas, beans, and spices, are brought long distances on the backs of camels to the desert dwellers.

Fats and oils are used as fuel for cooking food and for lighting the tent. A rug spread upon the sand serves as a table, and the Bedouins, seated upon other rugs, usually all eat out of the same bowl, for few dishes are used (Fig. 3).

Sometimes, when grass is very scarce many of the Bedouin's animals die from thirst and starvation. During such times he and his family suffer great hardships. Then it is not unusual for a party of hungry Bedouins to rob travelers and merchants who happen to be crossing the desert.

How the Bedouins are clothed. In the desert the day is very hot and a Bedouin must have protection from the fierce heat of the sun. For this reason he wears loose, flowing garments because they are cooler than closely fitting ones. He also wears a headdress to keep the sand from getting under his clothes and to protect his head and neck from the sun (Fig. 5).

The young children often do not wear much clothing, for during the heat of the day they stay under the sheltering tent. In addition to their other clothing, the women and girls frequently follow the custom of wearing heavy veils over their faces.

The garments worn by the Bedouin family are usually woven in the home by the women and girls, and are made from the wool of the sheep or the hair of the goat or the camel. Many rugs, blankets, and shawls are woven to be sold or to be used in the homes.

How the Bedouin travels. In a region where it is so hard to secure food, clothing, and shelter, one must guard his property carefully, or it may be stolen. The very life of the Bedouin depends upon his animals. If they were taken from him, he and his family would probably die. Hence, to protect



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FIG. 4. A home in the desert. Bedouin women make butter by shaking milk in goat-skin churns. Where do they get the milk for making butter? Do you think this butter would taste like that used on your bread?

his property, the Bedouin must be a good fighter. Since it is not always safe to live alone, the Bedouins usually live in groups called tribes. When it is time to move to new and better pastures, all the people of the tribe move together in a caravan.



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FIG. 5. A small caravan resting. Note the way the camel folds up his legs when he lies down. How would you like to wear such long, loose clothes as these children do?



Keystone View Co., Inc.

FIG. 6. The ship of the desert. The camel is the Bedouin's best friend. Why is the camel often called the "ship of the desert"? Tell how one mounts a camel.

The camel is the chief burden bearer of the Bedouin, carrying all the heavy loads. Because it is so tall, its master makes it kneel down to be loaded. The loading is done by placing a large bag on each side of the animal. Into each bag are packed household articles and supplies. Then the camel rises and waits patiently until the other animals that make up the caravan are loaded and ready to move (Fig. 6).

The camel is a most valuable animal for use in the desert, for it can travel several days over the dry, hot sands without water. Over its eyes and nostrils it has peculiar flaps which protect them from the fierce sand storms that sometimes arise. When a horse is taken on a long trip over the desert the Bedouin usually takes a camel along to furnish milk for the horse. Thus the horse's hunger and thirst are both satisfied.

Of course, travel by caravan is slow, for not all of the people can ride and there are no good roads. During the middle of the day, when the heat is greatest, the caravan usually rests, and the traveling is done in the cool of the day or at night.

Do you not think the life of the Bedouin a strange one? Perhaps you wonder why he

does not live more as we do. But when we think of the barren land in which he lives, and the scant means he has for making a living, we know we could not do any better if we were living in a desert.

SOME RELATED PROBLEMS

1. What does the Bedouin do when overtaken by a severe sand storm?
2. Why is the Bedouin so fond of his horses and camels?
3. How do you think it would feel to be in the desert about the middle of the afternoon?
4. Have you ever been in a sand storm in the street or a field?
5. Why is every Bedouin boy taught to be skillful with horses?
6. Why do the Bedouins usually protect the oasis dwellers rather than rob them?
7. Why is the Bedouin so kind to the stranger who wishes to spend the night in his tent?
8. Why is weaving the chief industry among the Bedouins?
9. Why are the wells and water holes so necessary and so carefully guarded in the desert?
10. Why do different tribes of Bedouins frequently fight about the water supply?

SOME THINGS TO DO

1. Make a list of twenty household articles found in your home. Check off the ones that you would not expect the Bedouin to use.
2. Make a booklet of the Land of the Bedouin into which are pasted pictures of desert life. Label each picture and write a short story of what it means to you.

2. THE HOME OF THE ESKIMO

SOME THINGS TO LEARN

1. The kind of land in which the Eskimo lives.
2. Why plants and animals are so scarce.
3. How the Eskimo gets his food.
4. Why the people wear warm, heavy clothing.

5. Why the Eskimo does not build a house like ours.
6. Why the Eskimo's summer home is a tent.
7. Why dogs and reindeer are so useful.
8. What kind of tools the people use and how they are procured.
9. How sledges and kayaks are made.

The land of the Eskimo. The home of the Eskimo is in a very cold country far to the north (Fig 7). Here the winters are not only cold but also dark, because for many weeks the sun does not shine. The sun never climbs high in the sky, not even in midsummer. For many weeks in the summer, however, the sun never sets. This long summer day is a busy time for the Eskimos.

The plants and animals of Eskimo land. The winters in this country are so cold that the ground freezes to a great depth, and the summers are so short that only a thin layer of the surface soil thaws. As a result no trees can grow in the land of the Eskimo. But in some sections on the sunny slopes of the hills, mosses, grasses, berries, and flowers

may be seen in midsummer. Of course, but few animals can live in a region where so few plants grow. Some reindeer or caribou (Fig. 12) and musk oxen may be found, for they like the moss and even in the winter can dig it out from beneath the snow with their sharp hoofs. Nearly all the other animals, such as the fox and polar bear, live on meat or fish. In the sea, near the shore, are found fish, seals, and walruses.

What the Eskimo eats. Since the Eskimo cannot raise crops of grain or vegetables in his country and the land animals are so scarce that he cannot depend on them, how does he get food? There is only one thing left for him to do, and that is to turn to the sea. Here is where he must secure most of his food. So the men put in long days in the summer hunting and fishing for sea animals, mainly the seal and the walrus. In his quest for food, the Eskimo uses spearheads and fishhooks made from bones.

Whenever more food is secured than can be eaten at once, it is frozen and stored away



FIG. 7. The land of the Eskimo. The Eskimo lives in a country where it is always cold. Why does he use dogs instead of horses for traveling? Why might we call the land of the Eskimo a "cold desert"?

Nowell



Nowell

FIG. 8. The harvest of the Eskimo. The Eskimo gets most of his food and clothing from the sea. Here is an Eskimo dragging home a seal that he has just caught. As the man has no covering on his head it must be a fair day and not very cold.



FIG. 9. The clothing of the Eskimo. Eskimo children do not mind the cold. From what is most of their clothing made? Tell how an Eskimo's coat is made.



Nowell

FIG. 10. A summer picture of a winter home. Driftwood, stone, and moss sod are often used in making Eskimo winter homes. Why does the Eskimo family usually leave such a home in summer?

for use during the long winter night. For heat and light the Eskimo uses the thick layers of fat which are found just beneath the skin of the seal and the walrus (Fig. 8).

The Eskimo's clothes. Clothing such as we use is not warm enough for a person who lives in such a cold land. Moreover, he does not have wool or cotton from which to make cloth and so must depend upon the products of his own country. It is the skin of the seal which provides the Eskimo with fine, warm clothing. From it the women make caps, coats, mittens, trousers, underclothing, sleeping bags, and even covers for the floor and linings for the hut (Fig. 9).

The winter home of the Eskimo. You may wonder why the Eskimo does not build houses of stone and wood. Wooden houses would not be warm enough unless covered with snow, and, besides, there are no trees in his country. Although stone may be plentiful, the Eskimo usually finds it necessary to move so often to new places for hunting and fishing that it would not be worth while for him to build a stone house. Winter homes are sometimes made by digging a hole in the ground and then roofing it over with stone and moss (Fig. 10). But most of them are made of snow, which is plentiful here (Fig. 11). The Eskimo can build a snow house for his family in an hour or two.

Since he can build it so quickly and so easily, he can move as often as he wishes, for he can be sure that in an hour or two he will have a new, clean hut. In the summer, when his snow hut melts away, the Eskimo lives in a tent made of skins. The Eskimo's winter home is called an igloo.

How the Eskimo travels. Since no grain and but little grass grow in the land of the Eskimo, horses cannot live there. In place of them the Eskimo keeps dogs which he hitches to his sledge to take him from place to place. The sledge is made from driftwood, bones, and the skins of animals. What



Victoria Memorial Museum, Ottawa, Canada

FIG. 11. An Eskimo house. This winter home is a snow hut. Explain the strange opening into it. What time of the year do you think is shown in this picture? With what is the roof covered?

do you think he uses to make harness for his dogs? Several dogs harnessed together make an excellent team, which can travel a long distance in a day, even with a loaded sledge (Fig. 7). The dogs are fed frozen fish and what is left from their master's meal. The Eskimo dog has a heavy, furry coat which enables him to stand the intense cold without difficulty.

For use on the water, small boats called kayaks are made. For these, the Eskimos use a framework made of driftwood and bones, bound together with cords cut from skins. This framework is then covered with skins instead of boards (Fig. 13).



Nowell

FIG. 13. An Eskimo in his kayak. Why is the covering of skins instead of boards? Do you think the kayak tips easily? How is it moved through the water? Can you tell how it is hauled up on land?

The life of the Eskimo is not an easy one and there is no place for a lazy person. Every member of the family who is old enough must work in order to have food, clothing, and shelter. If the Eskimo has no reindeer (Fig. 12) he must make his usual catch of fish, seals, or walrus, or else he and his family will go hungry.

SOME RELATED PROBLEMS

1. Why are not the Eskimos sailors?
2. Find Greenland and Alaska on the globe and tell why Eskimos like to live there.
3. Why are Eskimo boys taught to be skillful in handling and caring for dogs?



FIG. 12. A herd of reindeer in Alaska. These animals can live on moss which grows in some parts of the cold northland. The reindeer are the Eskimo's good friends and are used by him for travel, and for clothes and food.

4. What do the Eskimo men do? What do the women do?

SOME THINGS TO DO

1. Construct an Eskimo scene on the sand table, using cotton for snow. Model the igloo, and figures of people, dogs, reindeer, polar bears, and other objects that are found in the region.
2. Construct the interior of an igloo, showing the furniture, sleeping places, and lamp.

3. OUR HOMES

SOME THINGS TO LEARN

1. Why we are interested in the Eskimos.
2. Why our ways of living are so unlike theirs.
3. Why we have a greater variety of food.
4. Why we need and have a greater variety of clothing.
5. Why our houses are so different from those of the Eskimos.
6. Why we can have so much more furniture.
7. Why we have more and better tools.
8. How our ways of travel differ from those in the northland.

The land in which we live. No wonder we are interested when we read about the home and the life of the Bedouin and the Eskimo. We are always interested in people who are unlike us. The ways of the Bedouin and the Eskimo are very unlike ours because the land in which they live is so different from ours.

Our great variety of food. In the long, warm summer of our country many kinds of

grain, fruits, vegetables, and grasses grow and we have an abundance of food in great variety. We eat the vegetables, fruit, and cereals, and the grain and grasses raised by the farmers feed many millions of cattle, sheep, swine, and poultry (Fig. 14).

Our clothing. Cotton, wool (Figs. 15, 16), and leather are all produced in our country, while silk, linen, and rubber come to us from other lands.

From these different materials such a great variety of clothing can be made that we may be comfortably dressed at any season. We do not have to depend on just a few kinds of clothing as do the Eskimos and Bedouins.

The homes of our country. The building of a house takes a much longer time in our country than it does in the lands of which we have been reading. We have so many kinds of material from which to build houses and we have so many different ways of building them, that often it is not easy to decide just what kind of a house will suit us best. Brick, stone, cement, wood, iron, copper, glass, and many other kinds of material are used in the building of our houses (Fig. 17). And then we must have so many different kinds of furniture to make us feel that we really have a good and comfortable house in which to live. How much more simple and how much more quickly made are the homes of the people who live in the desert and in the cold northland.



FIG. 14. A farmhouse.

For what is the barn used? Why are the buildings close together?

What is the man with the team doing?

Why is it an advantage to have the vegetable garden and the fruit orchard near the house?

Why do people like to have trees on the sunny side of the house?

SOME RELATED PROBLEMS

1. Why do our animals suffer less from hunger and thirst than do those belonging to the Bedouin?
2. What would a Bedouin or an Eskimo do if given either a brass bed or a piano?
3. Why have we a larger variety of fruits than has the Bedouin?
4. What articles might we trade with the Eskimo?
5. What might the Bedouin wish in exchange for his rugs and shawls?
6. Why do not the Bedouins build good roads in their country?
7. Of all the clothing that you possess what do you think a Bedouin boy or girl would like best?
8. What pleasures would you enjoy if you were to trade homes with an Eskimo or a Bedouin child?
9. If you were to spend an entire year living with an Eskimo family, what things in your own home do you think you would miss most?

SOME THINGS TO DO

1. Find pictures showing the ways of traveling in the desert, in the cold northland, and in your own country. Paste these pictures on a cardboard side by side, and write a short story comparing them. Try to use the new words you have learned.

4. WHAT IS A HOME?

SOME THINGS TO LEARN

1. Why many people help us in getting food.
2. Why clothing is necessary.
3. How we get clothing.
4. Why we need shelter.
5. How houses were made in the early days in our country.
6. Why home means more than food, clothing, and shelter.
7. Why everyone needs to work.

The need for food. Bedouins, Eskimos, and all other people in the world are alike in needing food every day. Food is needed



J. Horace McFarland Co.

FIG. 15. Cotton bolls. Tell what the bolls are. How many parts can you see? How are the bolls arranged on the stem of the cotton plant? Do all the bolls open at the same time?



FIG. 16. A sheep and her lambs. What is the covering of the sheep? How is it taken off? In which season of the year is this done? In which season do most of us wear woolen clothes?



FIG. 17. Homes in the city. These are brick houses. Why is a brick house better for a city or town than one made of wood? Why are the houses so close together?

to give us strength to play and work and to make us grow if we are young. We eat most of our meals in our homes, and often have food that has come from many different places. It takes many people to produce all the kinds of food which we use and to get them to our homes. The farmer (Fig. 14), the miller, the butcher, the baker, and the grocer are only a few of the hundreds of people who may have helped in furnishing the food that we eat at a single meal.

Why we need clothing. Everyone must have clothing. In fact, clothing is almost as necessary to us as food. When it is cold we protect ourselves with heavy clothing, and when it is hot we wear light clothing to keep us cool. When it storms we try to wear clothing that will keep us dry.

It is not so long ago that our clothing, and the cloth from which it was produced, were made right in the homes of the people. Today, however, all of the spinning and weaving in our country is done by machinery in large mills, where thousands of men and women are kept busy summer and winter. Our clothing is either bought ready to wear from a merchant, or else it is made at home from cloth bought at a store.

Why we need shelter. Shelter is necessary as a protection from heat and cold, from rain and snow, and in some places from

enemies and robbers. The tent of the Bedouin and the snow hut of the Eskimo may seem crude to us, yet they are most necessary. Thus, home means shelter for all of us as well as the source of food and clothing (Fig. 18).

In early days, in the parts of our country where there were forests, houses were built of logs. In sections where trees did not grow, many houses were made of sods of grass laid like bricks to form a wall. Today, many kinds of material, such as lumber, brick, stone, cement, and steel, may be used in building our houses.

Comforts of home. But home means more to each of us than just food, clothing, and shelter. Home is where one may enjoy life with his family. It is where one may entertain his friends and relatives. It is in the home that one learns to work and to help in making his parents and others happy, and it is the place where one is cared for by loving hands when he is ill.

All over the world, wherever people live, home is the place that almost everyone likes best, because it is there that he finds the most comforts and usually has the greatest pleasure.

The need for work and for working together. That home in which each person does his fair share of the work is always the happiest. We must all have food, clothing,



FIG. 18. A home in a hot, rainy country.

This home is in a hot country where it rains a great deal.

Why does the house have such a steep roof?

Do you know why the house is set up so high from the ground?

How are the people clothed?

Of what are the roofs of the buildings made?

and shelter, but without the help of others it is not possible to secure these things. In our country are many millions of people, and nearly all are doing some kind of work. Each person should be a worker, and while earning money to get the things he needs he will be helping others just as others are helping him.

In the pages which follow we shall try to find out how people live together, work together, and help each other.

SOME RELATED PROBLEMS

1. Make a list of ten kinds of food which may be bought at the grocery store. Which ones probably came from distant lands?
2. How does the baker help us in getting food?
3. Why would it be hard for us to get along without the grocer?
4. Why does our summer clothing differ from our winter clothing?
5. In what way does the tailor help you? the cobbler? the banker?
6. Why do we use so many kinds of material in building houses?
7. Why do we use cloth for our clothes and leather for our shoes?
8. Find out just how bread is made, and be able to tell the class about it.
9. What foods are made from corn? from wheat?
10. In what three ways are brick, stone, or cement houses better than houses made of wood?
11. Tell of some work that you have done that helped some one else to secure food.

SOME THINGS TO DO

1. Find pictures of as many kinds of good food as you can. Cut them out and paste them in your notebook or on a cardboard. Label them neatly.
2. Get samples of cotton, woolen, linen, and silk cloth. Put them in your notebook and label them.
3. Make a collection of pictures showing articles made from leather. Paste these in your notebook and label each with its name and use.

WHY HOMES ARE GROUPED

5. HOW VILLAGES AND TOWNS BEGIN

SOME THINGS TO LEARN

1. Two reasons why people live in villages and towns.
2. How villages differ from towns and cities.
3. Why there are stores in villages.
4. Why crossroads are good places for villages.
5. How the farmer helps the people in villages and cities.

How villages begin. In some places it is a long way from one home to the next one, but usually several families live near together. In the early days of our country homes were built close together in order that the people might better protect themselves from Indians and wild animals. Of course this danger no longer exists.

If people live in groups they are able to help one another in many ways. When there are few homes in a place, we call the little group a *village* or *hamlet*. Many homes grouped together form a *town*. If there are many hundreds of homes, built close together, we call the place a *city*. In the United States over half of the people live in towns and cities.

Reasons for stores in villages. In a small village the homes are often grouped about the four corners where two roads cross. A crossroads corner is a convenient place for a store, a garage, a schoolhouse, a church, or a post office, because people can so easily reach it (Fig. 19).

A village begun years ago about a corner may now be a large town. In fact, many of the large towns and cities of our country were once small villages. Their crooked and narrow streets were once country roads or paths or cattle trails.

How farmers and townspeople help one another. People who live on farms in the country and those living in villages or towns help one another in many ways. In fact, neither could get along without the other.



FIG. 19. A country store.

This house in the country is the home of a family. It is also a general store and a post office.

Do you think a customer can order goods over the telephone?

Why would a crossroads corner be a good place for the location of a country store?

What would the farmer bring to the store to sell? What would he buy there?

How would the merchant get goods from far-away places?

In his store the grocer sells food from perhaps many far-away places. Some he may buy from farmers in the neighborhood (Fig. 19).

The farmer who produces more meat, milk, butter, or eggs than he and his family can use, has food to sell. Then he can buy food, clothing, or other things he may need in his home but cannot produce on the farm. The merchant sends the products he bought from the farmer to other places and sells them to people who need them.

6. VILLAGES AND TOWNS GROW INTO CITIES

SOME THINGS TO LEARN

1. What city people do for the villagers and the farmers.
2. Why the farmer grows more products than he needs for his own use.
3. Why more clothes and shoes are produced in the cities than the city people need.
4. Why city people live so close together.
5. Why so many people now live in cities.

How cities differ from villages and towns.

In large cities there may be little or no land about the houses; in villages the houses are not so close together; in the country houses may be a long distance apart.

In the country land is used for farms or forests; in the city people need the land for other purposes, and there is often little room for trees or even grass.

How people in cities live and work. In some cities so many people want to live in a small space that houses may be five or even ten stories high, and may contain homes for many families, all living on a piece of ground that would seem small for just one family in the country (Fig. 20). In some cities many business blocks are more than twenty stories high, and thousands of people can work in one building.

People live close together in cities because they can work and do business with one another more easily than they could if they lived far apart.

How country and city folks help one another. The country furnishes the cities their food and the materials for clothing. It takes a vast quantity of food to feed the people in a city even for a day (Fig. 21).

A village merchant helps both the farmers and the city people. He buys in the cities the things farmers need and sells in the cities the things farmers produce. Cotton, wool,

and flax are woven into cloth and made into clothing in cities. Hides are tanned into leather and made into shoes, gloves, coats, and harness by the workers in the cities. Whether he lives in the city or in the country, everyone needs many kinds of manufactured goods. These are but a few of the ways in which city and country people help each other.

SOME RELATED PROBLEMS

1. Why do children playing in groups have more fun than a child who plays alone?
2. Name five near-by villages and towns.
3. If you were to start a store in your home town, where would you want it placed? Make a drawing of the place you would select, showing how the streets and roads make it a good center for a business.
4. Why are the buildings in the center of a large city usually higher than those farther away?

SOME THINGS TO DO

1. If possible, find a picture of your village or town when it was first settled, and compare it with a recent picture.
2. Collect pictures of other towns and tell what people are doing there.
3. How do these towns seem different from your own town?

WHY ROADS AND STREETS ARE NEEDED

7. WHY ANIMALS MAKE PATHS AND TRAILS

SOME THINGS TO LEARN

1. Why animals make paths.
2. Names of small animals that make paths.
3. Why paths are narrow and usually crooked.

How roads and paths are made. Animals going in search of water and food, and returning to the places where they sleep, usually



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FIG. 20. A residence district in Los Angeles. Notice the large buildings, each of which will furnish a home to many families. These great apartment houses are taking the place of small houses because the land is so valuable that it must be occupied by as many people as possible.



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FIG. 21. A traveling market. This market man starts from the city with a load of articles which the farmers or country storekeepers need. He buys fresh products from them and goes back with a load for his city customers.



FIG. 22. A path through the woods. Why is a path through the woods almost always crooked? What must be done to a path to make it a safe road for wagons or automobiles?



FIG. 23. Rebuilding a country road. What is gained by smoothing the road? What hauls the road machine? Find the part of the machine that moves the dirt. How many men are needed to do this heavy work?

follow about the same route. They wear down the grass or roll over the stones, and soon it is easy to follow the path or trail they have made. Even an ant hill will show the paths the little insects have made as they have hurried back and forth doing their work. A path for an animal is the road that it follows in its travels just as we follow roads or streets (Fig. 22).

8. WHY PEOPLE BUILD GOOD ROADS

SOME THINGS TO LEARN

1. Why we need roads.
2. To whom the roads belong.
3. Why the roads should belong to the public.
4. How the roads are kept in good condition.
5. What a good road is.

The need for good roads. After the farmer has raised a big crop of corn or wheat he needs good roads on which to haul his crop to market (Fig. 23). If the roads are like the one in Fig. 24 he can haul only a small load. But if the road is like the one in Fig. 25 he can haul large loads and get his crop to market quickly and more cheaply. Everyone who travels from place to place on business or for pleasure likes to have a good road to travel on. So much freight is now carried on the roads by auto trucks, and people travel so much in automobiles, that each year every state builds more and more good roads.

What is a good road? A good road is one that is so hard that it is not easily damaged by the many heavy loads that pass over it. It should be higher in the middle than it is on the sides so that the water will drain off quickly after a rain. The best roads are made of crushed rock or cement, and are always hard even in rainy weather (Fig. 26). Dirt roads, if they are not oiled, often become muddy when it rains. When they dry they are often rough and full of ruts (Fig. 24).

Who owns and cares for the roads? Most roads belong to the public, or to all the people



FIGS. 24 and 25. **A poor road made good.** Notice the rough surface and the mud and water on the poor road. The horses are pulling hard to draw the front wagon and can move only very slowly. On the hard good road vehicles can move swiftly and much heavier loads can be pulled by the same amount of effort by a pair of horses.

together, and can be used by anyone. Public roads are built and kept in repair by men hired for that special work. If each person owned his own private road, and built it himself, good roads would be impossible.

9. WHY CITIES NEED STREETS, SIDEWALKS, AND PARKS

SOME THINGS TO LEARN

1. Why there is more travel on city streets than on country roads.
2. The need for city parks and playgrounds.
3. How streets, sidewalks, and parks are cared for and made safe.
4. How people in cities pay for all these conveniences.
5. Why each person cannot share in doing work for all the people of a town.
6. What a tax is.

Why so much travel on city streets. Where a large number of people live on a small area of land there must be a great deal of travel as the people go about their work. In cities there are so many people that the streets are often crowded, and for this reason they should be well made and should be wider than country roads.

How good streets are made. Streets used by trucks or automobiles should be hard and smooth. Those for horses are better if they are paved with bricks, or with blocks of

stone set on end. The little cracks between the bricks or stones make it easier for the horses to get a footing so they can pull heavy loads, especially on hills.

If a street is long, openings are made at the street corners, and often in the middle of the blocks, for the water to run down underground into a large pipe or sewer that carries it away.

In most towns and cities the water which people use in their houses, the gas they use for cooking, and the wires that supply electric light are carried under the streets in pipes. Usually near the edge of the sidewalk there are places where the water can be turned on to put out fires or for use in cleaning the street.

How streets are kept in repair and made safe. In many towns and cities the streets are used a great deal at night, and have to be lighted so that people will not get hurt or lost as they go from place to place after dark.

If a street is a busy one it must be kept clean. In many cities men known as street cleaners work all day, and sometimes all night, sweeping up and carrying away dirt and rubbish (Fig. 27).

Policemen are necessary in the crowded streets of the city. They help to keep order and assist people who are unfortunate or who



FIG. 26. **Making a concrete road.**

This large machine makes concrete by thoroughly mixing sand, water, and cement.

The concrete is then poured out and the bed is covered to the top of the side walls.

How is the concrete leveled? How is it smoothed? How long will it take the concrete to harden?

How soon can the road be used?

Do you know of other materials that are used in making good roads?

want help in finding their way. At crowded corners the policemen direct the movement of automobiles and people so as to prevent accidents.

The need for sidewalks in cities. As the streets are often so crowded with automobiles or teams that it is not safe for people to travel there on foot, a part of the street at the sides is divided off for walks. These sidewalks are usually made of cement, bricks, or some other hard material that will not easily wear out (Fig. 28).

In the country, where the roads are not crowded, children walk to school along the sides of the road or in paths across the fields, but in a town or city they follow the sidewalks and are supposed to cross the streets only at the corners.

Why people in cities need parks and playgrounds. In cities the land is so covered with buildings that there is little, if any, room for yards about the houses. In order, therefore, that people may enjoy the grass and trees, parks are laid out. Perhaps you have visited or seen pictures of Central Park, New York, or Audubon Park, New Orleans. In a park one may sit under the trees, walk or ride along the winding paths, and enjoy other pleasures that many country children

have every day. In many city parks there are beautiful gardens of flowers and perhaps collections of animals, or "zoos." Usually places are set apart for games or playgrounds for children and grown-ups.

How these conveniences are paid for. All these things that people in cities need cost a great deal of money, but they are worth all they cost, because they help keep people happy and healthy. No person could attend to his own business and at the same time work at making streets and sidewalks or do the many other necessary things that help everyone. Some people, therefore, are hired to care for the streets (Fig. 27), others to take care of the parks, and others to be policemen.

Every city has many men and women working for it. This means, of course, that they are working for all the people in the city. These people are paid by the city. The city gets the money for such expenses from the people. Every person who owns land, buildings, or other valuable property pays each year a certain amount of money. This money is known as a tax. School teachers, firemen, street cleaners, policemen, and many other employees work for the city and are paid by means of taxes.

SOME RELATED PROBLEMS

1. How may paths and trails sometimes become important roads or streets?
2. Why did the Indians make paths and trails and travel "single file"?
3. Why did the first white explorers in our country follow Indian or buffalo trails?
4. Why are roads better cared for than paths and trails?
5. Tell how it is made possible for roads to cross streams and rivers.
6. What can be done after a rain to keep a dirt road from becoming rough and full of ruts?
7. What would happen if city streets were unpaved?
8. Why do city folks need parks more than do country or village folks?
9. What becomes of the water that flows down the city streets after a rain?

SOME THINGS TO DO

1. Make a drawing to show how cattle make a path going around bushes, trees, or rocks.
2. Make a drawing of one square block in your city or town, showing where the houses are located and who lives in each.
3. Make a drawing to show how you could find the home of a friend who lives in the city.
4. Write a description of a park you have visited.

WHAT IS MEANT BY GOVERNMENT**10. HOW RULES AND LAWS ARE MADE****SOME THINGS TO LEARN**

1. Why the members of a family should help one another in the home.
2. The work of different members of the family.
3. Who makes the rules for the government of the home.
4. What we mean by government.
5. The title of the chief city officer.
6. How laws are made.
7. How laws help us in living together.
8. What may happen to the lawbreaker, and why.
9. Some laws that are necessary and helpful.

How we live and work together. Every boy and girl knows that no one member of



FIG. 27. A street cleaner. Why do city streets need cleaning? How is the money secured to pay this man for his work? How does the work of the street cleaner help each person who lives in the city? How can the people in the city help the street cleaner in his work?

the family can do all the work necessary to make the home life pleasant, and do it as it ought to be done. Each one in the family must do his part (Fig. 29). The little group



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FIG. 28. A busy city street. In how many ways are people traveling on this street? What special place is provided for those who walk? Why are sidewalks necessary? Note the many lamp-posts and lights for lighting the street at night.



FIG. 29. Coöperation at home. What is the boy carrying? What other work may a boy do to help at home? What may a girl do? What can you do to save your mother labor and keep the home a pleasant place in which to live?

in the home must learn to live and work together just as do large groups of people in towns. Some one must care for the house and see that meals are prepared; some one must earn the money to pay for all the things the family needs. There should be rules that each one must follow so that no one may fail to do his part. Thus a home is a little *government*, the simplest kind of government there is, and one that every child knows in his everyday life.

Why people select town officers. We have seen that in every town and city there are



FIG. 30. A city playground. Why are playgrounds needed in a city? What is the boy doing who stands behind the catcher? What happens if a boy does not obey the rules when playing baseball?

many things that must be done for the good of all the people. We have learned how people help to get such things done by paying taxes. There must be men to plan the work of the city or town, to make the rules that everyone must obey, and to do the many other things that no one can do for himself. So the people choose or elect certain men and women to work for the town or city. These are known as town or city officers. It is the duty of the officers to work for all the people by looking after the business affairs of the city, or, as we say, the city government.

In large cities there is so much public business that the government is carried on by many men, while in small towns only a few men, perhaps only three, are chosen to take care of the business of the town.

The man who is at the head of the government of a city or large town is usually known as the mayor.

Why we need laws in town and city. The rules or laws are made to help everyone, and every good citizen tries to follow them. A person who does not obey the laws is not a good citizen and is likely to be punished.

The laws for the town or city may refer to many different things. They may forbid people to drive their automobiles at high speed or to throw rubbish into the streets. Since laws are made to help people, they deal with things that a man may do, as much as with those he must not do. Laws are really made to help and not to annoy us. We could not get along without laws.

II. THE NEED FOR GOVERNMENT

SOME THINGS TO LEARN

1. What makes a state.
2. Meaning of "capital" and "capitol."
3. Some things the state government does.
4. The title of the chief state officer.
5. What our national government is.
6. Some things the national government does for us.

What makes a state. Just as people unite in selecting the officers of their town, township, and county, so neighboring places, covering larger areas of country, unite in forming a *state*. Some of the officers elected to carry on the state government make laws for all the people of the cities, towns, villages, and smaller country settlements within the state. The state officers meet regularly at a city in the state which is known as the *capital* city. The building in which they carry on the business of the state is known as the *capitol* (Fig. 31).

How state business is managed. The state government fixes by law what people must do in order to vote. To vote means to help select town, county, or state officers. State laws also set the time when certain animals may be hunted and certain fishes may be caught. The state government manages many things that are useful to all the people in the state, such as hospitals, state roads, canals, and state parks.

The chief officer of the state government is known as the governor.

The national government. All the voters of the country, both men and women, choose officers to manage the affairs in which everyone in the country is interested. Since our country is made up of many states, it is called the *United States*, and is known as the *nation*. The highest form of government we know is the United States government. It is often spoken of as the national or federal government (Fig. 32).

The man who is chosen by the people once in four years as chief officer of the United States government is called the president. He has many men to work with him. Some of them are chosen or elected by the people, while others are selected by the president and the leading men he chooses to assist him.

What the national government does. The United States government manages many

kinds of business which help everyone in the country. Perhaps the Post Office Department, which arranges for the sending of mail to all parts of the world, is the best known, because nearly everybody receives or sends mail (Fig. 33).

The United States government also manages the business between our government and the governments of all other countries. We shall learn of other ways in which we are helped by the national government when we study the different parts of our country.



FIG. 31. The capitol in Hartford, Connecticut. Why do the people of a state erect such buildings as this? How do they get the money? Where is the capitol in your state? How often does the legislature in your state meet to vote money for state expenses and to make laws?

SOME RELATED PROBLEMS

1. Why are rules necessary in playing a game of baseball? Who is the chief officer?
2. Why is it necessary in a ball game for each player to do his best? How might one player, who did not follow the rules, lose the game for his side?
3. How many games can you name in which no rules are necessary?
4. Why are rules needed in school? How are the rules for your school made, and who is the chief school officer?
5. When is our national election day, and why is it often a holiday?
6. How do your father and mother help in making the laws for city, state, and nation?



FIG. 32. The national capitol.

The laws for our government are made in the national capitol.

The city in which the capitol is located is known as the capital of the United States.

What is the name of this city? For whom was it named?

Find pictures of other buildings with a dome. Compare these domes with the one shown. Which do you like better? Why?

Note the columns in this building. What are they for?

7. Why is it necessary to make laws about the use of roads by automobiles?
8. How does everyone help support the Post Office Department every time he mails a letter?

SOME THINGS TO DO

1. Find out the name of the chief officer of your state; the chief officer of the nation.
2. Find out several things that are managed by your town or city government.
3. Find out how the roads in your locality are kept in repair, and how this is paid for.

HOW THE SURFACE OF THE LAND AFFECTS PEOPLE

12. WHERE HOUSES ARE BUILT

SOME THINGS TO LEARN

1. How the surface of the land affects the grouping of houses.
2. Why some land is needed about a house.

Where houses and roads are built. We have seen that houses are necessary for making homes, and that roads or streets connect houses or different places where people live. Houses are built on land, and roads and streets are laid out across the *surface* of the land. But the surface of the land is not always the same. No two places are just alike. Hence the way houses are grouped

and the way the streets and roads in any locality run depend a great deal on the slope of the land surface. But in every case a person likes to live near a road or street, so that he can easily travel and carry on business with his neighbors.

The need for land about a house. Every house has a certain amount of land about it, although sometimes this is very small. On at least two sides of every house there should always be an open space. This gives the sunlight a chance to strike the windows, and the air a chance to move in and out freely. Sometimes there is room for a garden in which vegetables and flowers can be raised. There may be a little grass plot for a playground.

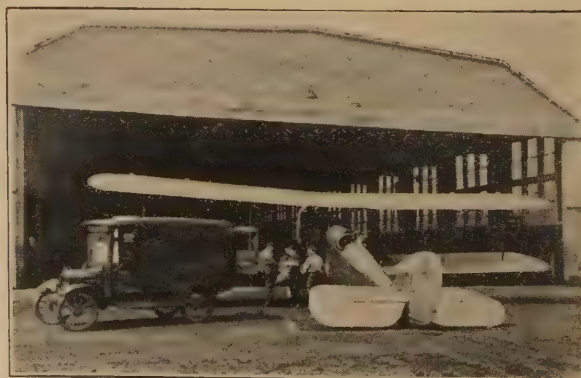


FIG. 33. Transferring mail. Our national government attends to the carrying of the mail. What is the most rapid means of carrying mail? How could you send a letter by airplane? How is the mail brought to your home?

FIG. 34. A wheat field on the plains of Canada.

Why is a plain such as this one a good place to grow wheat?

What will have to be done to get this wheat ready to sell?

What are some of the things made from wheat?

Explain the absence of houses and barns in this large area.

Why are there no fences?

Do you see any hills?



13. THE LAND ON WHICH WE LIVE; PLAINS

SOME THINGS TO LEARN

1. Why one can see a long way on a plain.
2. Why traveling and road making are easy on plains.
3. Why plains are good for farming.

The landscape in flat regions. In going back and forth between his home and the school, the church, the town, or the woods, every child goes over the land, but the view or landscape which he sees is different in different places.

If the land is smooth and even, then the path or road which he travels is often straight and level.

In such regions one can see a long way in all directions, as few heights or *hills* rise above the lower land to shut out the view. Such broad, flat regions are called *plains*, and a large part of the world has a surface that is more or less like a plain.

Road making and traveling on plains. Where the land is nearly level for long distances, roads and railroads are quickly and cheaply built in any direction. Traveling is easy in such a region. If the roads are good, the farmer is able to haul large loads to market, and teams and automobiles are able to travel easily and rapidly.

Farming on plains. Land that is nearly level is generally easy for the farmer to till.

For this reason, and because the soil often is rich and deep, much of our food is produced on plains. On some plains the farms often are so large that it would take hours to ride around one of them (Fig. 34). This makes the homes several miles apart, and people seldom visit one another. They live lonely lives unless they have telephones to use in talking with their neighbors, or radios to hear music and talks from perhaps many miles away.

More of the people of the world, however, live on plains than on any other kind of surface. Yet we shall learn that some of the greatest plains in the world are unoccupied because they are too cold, too dry, or too wet.

14. LIFE IN A ROLLING COUNTRY

SOME THINGS TO LEARN

1. How we may enjoy the hills.
2. What we mean by a rolling country.
3. About road making in a hilly country.
4. The meaning or definition of "plain," "hill," "rolling region," "slope," "valley."

How a rolling country looks. In some places the land surface is rolling, or uneven. In such a country one can see heights or hills and the *lowlands* or *valleys* between. Now and then from the higher hilltops fine, distant views may be seen.

The hills *slope* down to the valleys. In those parts of the country where there is



FIG. 35. A rolling country.

How are the more gentle slopes used?

What use may be made of the more rugged country in the distance?

What pleasures might you enjoy on a visit to the home shown near the center of this picture?

Of what value is a region like this to people who live in a city?

What reason have you for thinking this district has plenty of rain?

much snow in winter, children often coast down the hill slopes to the valleys. A coast of a minute or two may cover a distance so great that it takes many minutes more to walk back.

How hills and valleys affect road making.

People traveling long distances always try to go on good roads that have gentle slopes, for travel there is faster and easier. Roads are built in valleys as much as possible, but when a road has to go over a hill it follows the gentlest slopes and crosses the hill where the ridge is lowest. Sometimes, to make the climbing of a steep hill easier, the road winds back and forth along the side of the hill. Traveling over a rolling, or uneven country, therefore, is not so easy as over a plain or flat country.

Homes in a rolling country. A rolling country is more beautiful than a flat country, and in some ways a better place in which to live (Fig. 35). In many regions there are farms in the lowlands and on the gentle slopes, with grassy pastures for cattle, sheep, and horses on the steeper slopes. Often the houses and villages nestle in the valleys where the wind is not so strong as on the hills. If there are only a few houses in the valley, usually they are built on the side that faces the morning sun. At sunrise and sunset the hilltops are often in the sunlight, while the

foot of the hills and the lowlands are in deep shadow. Thus day lingers longer on the hills than in the valleys. At noon, when the sun is highest in the sky, most of the valleys are bathed in sunlight.

SOME RELATED PROBLEMS

1. Name several games that could not well be played on a hill slope.
2. Why are hills and valleys not often used for the same purpose?
3. Tell three interesting things about the longest stretch of level land over which you have ever traveled.
4. Would travelers in a new country be likely to follow the course of the valleys?
5. If you were to build a large bonfire to celebrate the Fourth of July, would you place it in a valley or on a hill? Why?
6. Give a reason why east- and south-facing slopes are good places to build houses.
7. Where would you get the finest view, from a hill road or a valley road? Why?

SOME THINGS TO DO

1. Collect some pictures of scenes on plains showing what the people are doing.
2. Make a list of interesting things you can see from the highest hill in your neighborhood.
3. Find in this book six pictures that show valleys and five that show plains.

FIG. 36. A mountainous country.

This scene is in the Rocky Mountains in Colorado.

How many mountain peaks can you count?

Give two possible reasons for snow on parts of the surface.

What kind of vegetation is shown?

When you look at this picture what makes you think there is little grass growing in this region?

Do you think this district will ever be thickly settled?

Give a reason for your answer.



Ewing Galloway

15. THE VALUE OF LARGE AREAS OF HIGH LAND

SOME THINGS TO LEARN

1. What mountains look like.
2. What wild animals live in mountain regions.
3. What mountain people do for a living.
4. How a plateau differs from a plain.
5. How a plateau differs from a mountain.
6. How people on plateaus make a living.

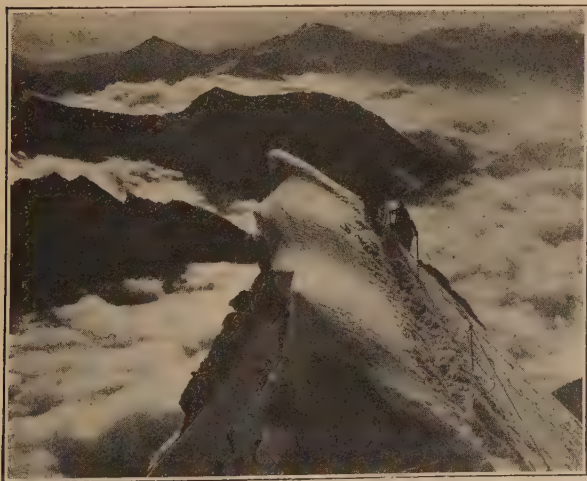


FIG. 37. Mountain peaks. These high peaks are in the Alps in Europe. They are so high that beautiful clouds are seen below the summits. What might one see below if the clouds should clear away? What do you see that makes you think mountain climbing is a dangerous sport?

7. Why few people live on mountains and plateaus.

8. How people travel over plateaus.

What one would see in mountain regions.

In some regions the slopes are steep and long, and the lowlands lie far below the *highlands*. Such a country is rough and full of ups and downs, or, as we often say, is *mountainous*.

Mountain regions are usually made up of a number of groups of mountains or *mountain ranges*, with lower land lying between (Fig. 36). The highest points in a mountain range are known as mountain *peaks* (Fig. 37).

In some mountain regions the slopes may be so steep that nothing, not even a sure-footed mountain goat, can climb them, and the peaks may be so high that people have never yet been able to reach their tops or *summits*. Oftentimes the slopes are almost straight up and down, like a wall, and form a *cliff*. Cliffs, sometimes hundreds of feet high, make mountain climbing a dangerous sport in some regions. Yet many people enjoy mountain climbing, and when they have a holiday turn to it as a sport, just as a boy turns to baseball or football.



FIG. 38. A mineral area in the mountains of Mexico. The valuable minerals are taken from the rocks in the mountains. Notice the large piles of waste material. This is rock from which the valuable minerals have been removed. The good road has been built so that supplies may be easily brought in and minerals carried out.

Plants and animals on mountains. The summits of very high mountains are covered with snow all the year round (Fig. 37). Lower down, where the snow and ice melt in spring, the slopes are frequently covered with forests. These forests are often the homes for wild animals, such as bears, mountain goats, mountain lions, and other animals that are hunted for their fur or for sport.

Why few people live in mountain regions. Some mountain regions have so rugged or



U. S. Dept. of Agriculture

FIG. 39. A high mountain valley. Do you see any water? Why should people like to visit such a region? This is a summer picture. Why do you think the snow has not all melted?

rough a surface that few people can earn a living there except perhaps by hunting wild animals or by digging valuable minerals, such as silver and gold and copper, from the ground (Fig. 38).

Many mountain areas are so far away from where people live, or are so rough and difficult to travel through, that but little is known about them. Even in the mountain regions that people do visit, it is often necessary to have a guide to help one find the safest way. There may not be even a trail to follow through the forests and over the slopes. A person who did not know how to travel in such regions would soon be lost. Hence in some mountain regions there are many men who earn their living by acting as guides for visitors and travelers.

How mountains may be useful. Some of the finest timber lands of the world are on mountain slopes, but as many mountain forests are so far from where this lumber could be used they are now of little value. Some day, however, after the forests which are more easily reached are used up, these fine timber lands may furnish lumber for building purposes.

It is cooler on the mountains and mountain slopes than in the lowlands, especially in summer. For this reason, and because of the scenery, many people spend their summer vacations in the mountains. Here one may enjoy hunting, walking through the mountain valleys, or climbing the peaks to see the beautiful views (Fig. 39).

Many valuable minerals, such as gold, silver, and copper, are found in mountain regions. Where the mineral deposits have proved rich, mining towns have grown up in the mountains. Some of these towns, such as Cripple Creek, though small, are known the world over, perhaps, because of the valuable minerals they have sent out.

Oftentimes in mountain regions there are grass-covered valleys and slopes that furnish

much good pasture for sheep and cattle in the summer. This is true in certain parts of our own country, and here sheep are raised in large numbers.

What one would see in a plateau country.

A *plateau* is a region that is a nearly level highland. Because plateaus are flat and higher than the surrounding land they are sometimes known as *tablelands*. There are large plateaus in our own country where some of the largest and deepest valleys of the world are found. But these great valleys, are only a very small part of the broad plateau. Most of its surface is high and nearly level.

How people travel on plateaus. It is not possible to construct roads and railroads across the deep, steep-sided valleys of a plateau region and hence they cannot be built in almost any direction as they usually can be on plains. As a result, many plateaus have few railroads or perhaps even good roads.

Since there are few roads on plateaus, the people usually travel on horseback, because a horse can go quite easily over a country where it would be almost impossible to drive in a wagon or an automobile. This method of travel has made famous horsemen of the Indians of the plateau region of the United States. Even the boys and girls begin to ride horseback when they are so small that they must be tied to the saddle to keep from falling off.

Plateau regions often contain valuable minerals, and they may be forest covered. Usually, however, they are of most value as grazing areas for sheep or cattle.

16. SUMMARY; WHERE MOST OF THE PEOPLE LIVE

SOME THINGS TO LEARN

1. Why most people live on plains.
2. Why the high land is the better place for homes.

Most of the people of the world live on plains, because they are the most productive

regions and because trade can be most easily carried on over plains. Cities can grow in any direction and so are most numerous on plains. If there are hills above the lower land in a city built on a plain, most of the business is carried on in the lower regions. People build their homes on the hills because there they have better views and do not get the smoke and dust from the factories.

SOME RELATED PROBLEMS

1. Why would you expect to find more paths and trails than roads on a mountain?
2. Why is it hard work to climb mountains?
3. How are railroads built through mountain regions?
4. Why is it better to have level streets in cities than streets with steep slopes?

SOME THINGS TO DO

1. Write a short story telling why you would like to visit a mountain region.
2. Find pictures of roads in mountain regions and on plateaus, and tell how they differ from roads on plains.

HOW WATER ON THE LAND ASSISTS PEOPLE

17. WHAT HAPPENS TO THE WATER THAT FALLS ON THE LAND

SOME THINGS TO LEARN

1. Three ways in which water disappears after a rain.
2. Where streams are formed.

How the air gets some of the water. When it rains or snow melts, the surface of the land is covered with water. But a few hours after the rain stops falling, the surface of the ground may be dry again. The water disappears in three ways. The air dries up a large amount of it. If the wind is blowing and the sun is shining, the air takes up the water very rapidly, just as it dries clothes on the line.

How water goes into the earth. Much of the water soaks into the ground, and the soil



FIG. 40. A stream in a pasture. Springs and streams often furnish drinking water for both man and animals. Notice the gentle, grass-covered slopes of the pasture and the steep, bare slopes next to the stream. Can you explain the reasons for the differences in these slopes?



FIG. 41. A dry country. This region is too dry for trees and grass to grow. The bushes that dot the ground are a kind that grow only in dry countries. Why are there few people living in this country? Here there are no streams, and very few springs. Do you think it would be difficult to travel in such a region?



Ewing Galloway

FIG. 42. A reservoir for the water supply of a city. When the water is thrown upward into a beautiful spray, it is mixed with air, which helps to keep it pure and wholesome. This reservoir in the Catskill Mountains, 85 miles from New York City, supplies a part of the water for the city. Find out why New York City goes so far away to locate a reservoir.

may contain a great deal of it. We know that water goes down to very great depths, because it is always found in deep mines. Indeed, in many mines pumps have to be kept at work all the time to prevent the water from filling the mine and driving out the workers.

How some water runs away and makes streams. The water that does not go into the air or soak into the earth runs down the slopes. If the slope is steep, the water runs fast; if it is gentle, the water runs slowly.

Where the lower edges of two slopes meet, a *stream* of water is formed. As all land surfaces slope, streams are to be found everywhere and at all times, except when it is so dry that no water runs down the slopes (Fig. 40). Even when the surface is dry the ground may be moist only a few inches down in the soil. The water which soaks into the ground is slowly moving downhill.

18. THE VALUE OF GROUND WATER

SOME THINGS TO LEARN

1. How water in the ground helps plants and animals.
2. How people get water from the ground.
3. How cities secure a water supply.

How water helps plants and animals.

Water is one of the most important things in the world, for every living thing uses it. Men and animals must drink it often.

Plants and trees cannot grow unless they get water in large quantities. They get it from the earth by means of their roots, which often go a long way down into the ground. If plants cannot get all the water they need, they wither and dry up. Everybody who has a garden or some house plants must water them often.

In some regions where water is not found near the surface of the ground, except in the lowlands, grass and trees grow only at the bottom of the slopes along the streams.

In such regions the upper slopes are bare, and brown or gray. They look quite different from the green fields most people know (Fig. 41).

How country people secure a water supply.

In the country, people get water by digging or boring a hole deep enough to reach the water in the ground. The water creeping through the soil collects in the hole, or well, and is then pumped to the surface.

Sometimes the creeping ground water comes to the surface on the side or at the foot of a hill, and makes what we call a *spring* (Fig. 40).

Springs and wells show us that the earth contains a great quantity of water. All this is rain water that has soaked into the ground.

How cities secure a water supply. The water for people in cities and large towns is often obtained from a stream or lake, perhaps many miles away. Sometimes a water supply is obtained from deep wells (Fig. 43), and is pumped into a large hollow in the ground. This hollow has been made especially for the purpose, and is known as a reservoir (Fig. 42). By means of pipes the water is carried not only into the houses but into the streets, where there are drinking fountains for the people and watering troughs for the horses, dogs, and birds.

19. SOME THINGS RUNNING WATER CAN DO

SOME THINGS TO LEARN

1. Three ways in which running water moves materials.
2. Why some streams can move larger bits of material than can others.

It carries bits of soil. The water in many streams is muddy and brown or yellow, especially when it rains hard. This color is due to bits of soil that are carried along in the water. We can show this to be true if we allow a glass of muddy water to stand for a few days. At the top of the



University of North Dakota

FIG. 43. A flowing well. This well has been drilled to a depth of 2,100 feet, or more than a third of a mile. Water flows out continuously—100 gallons every minute. How did this water get into the ground? What does this show as to the quantity of water in the ground?

glass the water will be clear, but at the bottom there will be a layer of fine bits of soil. The large amount of soil that will settle in a small glass of water shows that a large stream, which is made up of millions of glassfuls of water, must be carrying along a great deal of solid material.

It rolls pebbles and boulders. A swift stream running down a steep slope carries many pebbles and may even roll along large boulders. But in most streams it is only fine silt or sand that can be moved along the bottom or floated in the water.

It carries invisible materials. A little sugar or salt placed in a glass of water soon disappears, yet the water remains clear. We say the sugar or salt has “dissolved.” Most people do not like to drink rain water because it does not taste good. This is because it has no materials dissolved in it. All water that comes from streams or from wells contains dissolved matter.

So streams carry along not only the solid bits of soil we can see, but also a large amount of dissolved material we cannot see.

SOME RELATED PROBLEMS

1. Why is a street sometimes muddy and sometimes dusty?
2. Why is the water in a stream sometimes muddy and sometimes clear?
3. Why do we sprinkle city streets in dry weather?
4. What vegetables or fruits do you know that are full of water?
5. Why do not people in a city get water from wells just as country people do?
6. How does your city get its supply of water?
7. Why does a city pump water through pipes?

SOME THINGS TO DO

1. Watch a stream in the street and describe fully what it does.
2. Pull up a large weed. Make a drawing of the roots, showing the means by which they get water out of the soil.
3. Get a glass of water from a stream and let it settle. What size are the particles that are left at the bottom?
4. Find pebbles from the bed of a stream and compare them as to shape and size. What caused the difference in shape?



FIG. 44. The work of running water in a sheep pasture. How is the running water injuring the pasture? How do the two banks differ? Why? What holds the soil together at the top of the bank where it hangs over the steeper slope beneath? If it should rain, what would happen to the water falling in the pasture near the top of the hill?

20. THE WORK OF A RIVER; HOW RIVERS LOWER THE SURFACE OF THE LAND

SOME THINGS TO LEARN

1. What a river is.
2. How a gully is made.
3. How a gully may become a large valley.
4. How rivers carry a load.
5. How waterfalls and rapids are made.
6. The meaning or definition of "tributary," "river system," "river basin," "divide."

What is a river? A river is a stream of water which, as it flows through the land, carries away much fine rock material. This material is an important part of a river. Any stream, then, is something like a railway train or a truck, for it is carrying a load.

How rivers lower the surface of the land. One thing a river does, then, is constantly to change the surface of the land through which it flows, for it is impossible, of course, to take away materials from the land and not change it (Figs. 44 and 46).

The best time to study a stream at work, and to see the way it gets its load, is just after a heavy rain. Those who live in cities can see small streams at work in a street gutter after a rainstorm. But it is better to study a little stream that is cutting a small valley in a clay bank or a plowed field.

Here one can see the water tumbling down the steep slopes and forming a larger stream at the bottom. As the water moves down the slope to meet the stream, it wears a tiny valley which is called a *gully*. The rock particles, as they slide down the sides of a gully with the water, are seized by the stream and started on their journey down the river. As the work goes rapidly on, the gully becomes wider and perhaps longer, and thus the appearance of the land is constantly changing (Fig. 46).

The work of this little stream is like the work of all rivers. A large valley, such as is found in the plateau regions of the United States, is like the gully in the clay bank, only

a great many times larger and deeper. The present shape of valleys, whether they are small or large, is due chiefly to the work of the streams in them.

How rivers become larger. The many small streams flowing down the steep slopes in time join others and form a larger stream, much as the veins in a maple or oak leaf run toward the main stem. Thus a large river valley usually has a number of branch valleys with ridges separating one valley from the next (Fig. 45).

Each small stream is a *branch* or *tributary* of the larger stream. Each tributary is making a valley and giving its water and its load to the *main stream*.

A large river with all its branches forms a *river system*, and all the land which is drained by such a river system is a *river basin*.

How river valleys are separated. Somewhere between one valley and the next is a height or ridge which forms a dividing line, like the ridgepole of a house. The rain falling on one side of the ridge flows one way and that falling on the other flows another way.

This dividing line between one stream and the next is known as a *divide* (Fig. 47). The main divides are those that separate one river system from another. In every river basin there are also many smaller divides, which separate branches of the same river (Fig. 45).

FIG. 45. A view showing a low divide.

Notice how the trees grow along the stream valley at the left.

Another valley begins in the trees near the center of the right margin.

Now can you find the low divide along the road in the center of this picture?

How will the streams in these valleys change the landscape?



Courtesy of U. S. Forest Service

FIG. 46. A water-worn slope. Every heavy rain washes large quantities of soil from this slope. Why are the trees on the slope smaller than the trees at the top of the bank? Why is there no grass on the slope? Why are small pebbles or rocks to be seen at the bottom of each gully? What other kinds of waste land do you know?

Sometimes a valley contains nothing but a dry stream bed. Yet we know such a valley has been formed by running water because in every other way it is like valleys through which streams flow.



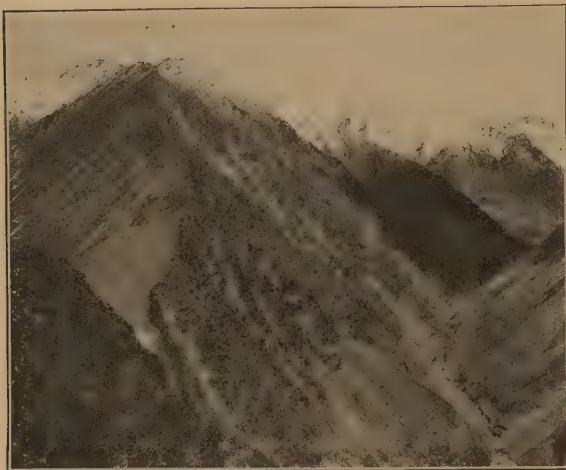


FIG. 47. A mountain divide. Where is the main divide? Point out a large valley. Find some smaller valleys and the divides which separate them. As years go by in what ways will the frost and water help to make the ridges less sharp?

Where rapids and waterfalls are found.

In some places the water of streams is moving slowly, in others it flows fast, according to whether the slope is gentle or steep. The swift stretches in streams are known as *rapids*. When the water leaps down a steep slope, we have a *waterfall* (Fig. 48). Waterfalls are always beautiful, especially where the stream is large, or where the water breaks into spray as it leaps downward through the air (Fig. 50). Some waterfalls are over a thousand feet high.



FIG. 48. Waterfalls. Why does the water here flow so rapidly? Why are there so many large rocks in the stream bed and no sand or gravel? Where do you think these large rocks came from?

SOME RELATED PROBLEMS

1. What are some of the uses of waterfalls of large rivers?
2. Do you know what "shooting the rapids" means? Why do explorers often meet dangers in following down a strange river in a boat?
3. Which can do the most work, a swiftly running stream or a slowly running stream? Why?

SOME THINGS TO DO

1. Find the slopes, divides, and valleys on the roof of your house or school building.
2. Watch how streams form in the gutter along a street, and notice what they are carrying.
3. Go to some hillside just after a rain and try to find some changes made by the streams. See if you can find the tributaries of the largest stream.

21. THE WORK OF A RIVER

SOME THINGS TO LEARN

1. Why rivers drop their loads.
2. How deltas are built.
3. The size of the soil particles of which large deltas are made.
4. About the value of deltas.
5. In what part of a river valley alluvial plains are made.
6. How rivers make alluvial plains.
7. Why alluvial plains are useful.
8. Why rivers become crooked.
9. Why traveling on winding rivers is slow.

How deltas are made. If we should go to a mud puddle after it had dried up, we would find that it had been partly filled with the material the little stream had dropped there. At the upper end, where the stream entered the puddle, there would be a small, flat plain with steep edges. Such a little plain made of rock materials dropped by the water is known as a *delta* (Fig. 49).

When a stream flows into a quiet body of water it loses its rapidity and cannot carry its whole load. A delta, therefore, is usually found where a stream flows into such a body of water.

At the mouths of many of the largest rivers of the world, such as the Mississippi and the Nile, deltas made up of very fine bits of soil are being built all the time. Some of the larger rivers have made deltas on which thousands of people now live.

How deltas are useful. Not all rivers are forming deltas, but where deltas are being made the land is gradually being built out into the water as the delta grows.

Deltas at the mouths of large rivers are made of the finest rock particles, and hence many deltas have excellent soil.

The making of alluvial plains. In the lower part of a river valley the water usually no longer leaps or hurries along in its course. Here the water flows slowly and the valley is usually broad and flat, with steep slopes far back from the stream. Between the river and the sides of the valley is a flat, gently sloping plain.

Such a plain, like a delta, is made of rock particles brought down by the river, and dropped as the water moved more slowly and was unable to carry all its load.

Plains made in this way are known as *alluvial plains*. The Mississippi River has a broad alluvial plain.

The value of alluvial plains. The valley in which an alluvial plain is found is not so



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FIG. 50. Yosemite Falls, California. Here the water leaps more than a thousand feet as it descends to the valley below. Notice the beautiful spray where the water breaks on the rocks. Notice also how the water has cut back into the hard rock at the top.

deep as it once was. It has been more or less filled up by the gradual building of the plain. Alluvial plains, like deltas, when made of fine soil make excellent farm land.

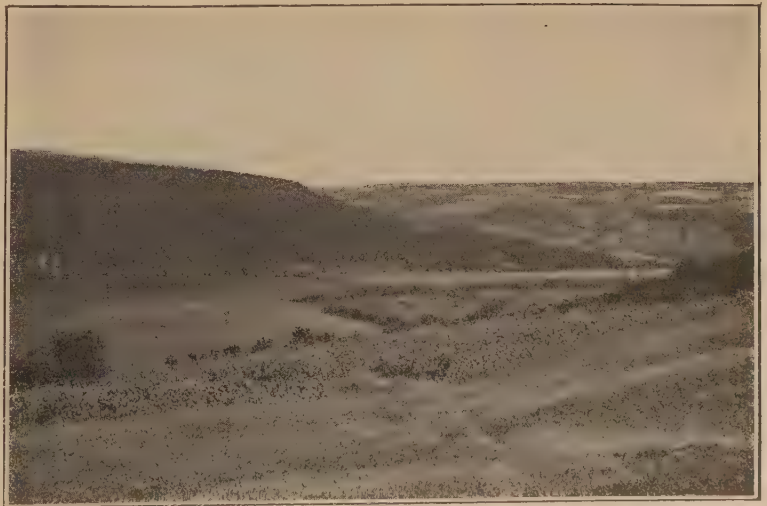
FIG. 49. A delta in a lake.

Find the place where the lake is being filled up by fine rock material.

How did this material get into the lake?

Do you think that, as years pass, this filling up will affect the size of the lake?

Why is the steep hill at the back so completely wooded? Notice the fields on the opposite slope.





Northern Pacific Ry.

FIG. 51. A winding river and its valley.

In this wide valley are a fine broad highway, a railroad, and a winding river.

Why is the valley a good place to build a railroad?

Why was the road built along the side of the mountains?

Why, do you think, this river is so crooked?

Where is the stream cutting into its banks?

How a river may become crooked. A river flows rapidly where the slope is steep (Fig. 48) or where it follows a fairly straight course. But through an alluvial plain a river flows slowly and quietly. The slope is so gentle that the flowing water does not have power enough to push things out of the way (Fig. 51). Here even a fallen tree may often turn a river to one side.

When a river has once begun to turn or swing it usually grows more and more winding. In an alluvial plain a river often winds and twists about in a snake-like course (Fig. 51).

Why traveling on a winding river is slow. Traveling by water along a winding river is slow, because one has to travel far between two points that may be close together. In spite of the slowness of traveling, however, the large rivers of the world, many of which are very crooked, are much used by boats that carry passengers and freight. It is usually cheaper to carry freight by water than by land.

SOME RELATED PROBLEMS

1. What happens to some of the load carried by a swift stream when the water has to move more slowly?
2. Why does not slowly moving water carry large bits of rock?

3. In what ways may a river in an alluvial plain be made to change its course?

SOME THINGS TO DO

1. Draw a straight line and then a very curved and winding line between the same two points. Which is the longer line?
2. In a partly dried puddle try to find the place where a small stream flowed into it. What helped you to find the place?
3. Study a winding stream, even a very small one, and find out where the deep and the shallow parts are.

22. WHY RIVERS ARE USEFUL

SOME THINGS TO LEARN

1. Why draining the land is necessary.
2. How rivers benefit city people.
3. The kinds of power used to run machinery.
4. Where the best places for water power are found in rivers.
5. Why swift streams are best for water power.
6. Why cities often grow up at waterfalls.
7. Why slow-moving streams are best for navigation.
8. The kinds of goods usually carried on rivers.
9. Why many towns and cities are built along rivers.
10. How rivers supply food.
11. The value of rivers for water supply.
12. Why people build canals.

Rivers drain the land. We have learned that rivers lower the surface of the land in some places and build it up in others. There are several other ways in which rivers are useful (Fig. 52).

Where the land is very flat, some of the water which falls on the surface soaks into the soil and some of it dries up. Where the land slopes, if only very gently, the water runs downhill, as we have seen, and is carried away. If none of the water were carried away by the streams, the ground in many places would be too wet for people to live and work there (Fig. 53).

Rivers also carry away waste materials and sewage from factories and from city streets and houses. Thus they help in many ways to make the country through which they flow a cleaner and better place in which to live (Fig. 52).

Rivers are used to run machinery. The power used to run an automobile comes from gasoline. In steam engines the power is supplied by coal. Wind turns windmills that pump water and do other useful work. The running water in small streams and also in rivers can be used to turn machinery by means of a water wheel which is turned as the water flows against it. This turning



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FIG. 53. A well-watered district. The river helps to make this a good place in which to raise crops. It does this by carrying away some of the water when it rains. Thus the land is kept from becoming too wet.

wheel may run machinery for many different kinds of work.

The best place for a water wheel is at a waterfall or at a rapids, where the force of the running water is strong. People sometimes place a dam in a river in order to get a fall of water to furnish power.

Water power from rivers is used to run mills for making flour, weaving cloth, knitting underwear and stockings, sawing logs, or making electricity. The electricity can be used to furnish light and to run street cars and machines.

Since water power can be used for so many purposes, it often happens that cities grow up where water power is plentiful (Fig. 52).

FIG. 52. A city built on the banks of a river.

Do you think the river is a help to the people of the city? In what ways does it help them?

Why are bridges built across the river?

Why are there more buildings in the valley than on the hill?

Does a river separate people, or does it make it easy for them to trade with one another?

Do you think this river could be used for a water supply?



Photograph by Elmendorf from E. Galloway

So we may say that a natural place for factory cities is where there are falls in rivers.

Rivers are used for transportation and for travel. In new countries where there are no roads or railroads, the easiest way to travel is by water. So in exploring new countries people, when they can, travel largely by means of boats on the rivers.

Since traveling on rivers is often very slow, the goods carried by river boats are usually those that do not need to be delivered quickly. Wheat, corn, coal, lumber, and iron ore are frequently carried by water. Before the days of railroads, rivers were more often used for shipping than they are now.

Travel by stream is always easy where the river is deep and the water is moving slowly (Fig. 54). Falls and rapids offer many difficulties. Perhaps the goods must even be unloaded and carried overland around the falls and rapids. After a country becomes well settled, the people often find it worth while to dig *canals* around the falls or rapids, so that the same boats can be used for longer distances.

Since rivers are useful for travel and for shipping, many cities and towns in our country have grown up along the banks of the larger streams. The large farms in the early history of our country often bordered streams, because the river furnished the best means of getting the crops to market.



Courtesy of Ohio River and Inland Waterways Magazine

FIG. 54. A steamboat on its way down the Ohio River. Do you think this boat can travel very rapidly? How will the boat pass the bridges which span the river? Compare this river boat with an ocean steamer as to size and shape.

Rivers may furnish food and water supply.

Some rivers are rich in fish, and many people find river fishing a profitable business. Many cities get their supply of drinking water from rivers.

Not only do rivers carry water away from the land, but they also furnish water to be put back on the land. In very dry regions water for the crops is often carried in ditches from the rivers to the land. Supplying water to crops in this way is known as *irrigation*.

SOME RELATED PROBLEMS

1. How may rivers prevent floods?
2. How may water be taken from a river to irrigate the upland?
3. Tell about a river to which you have taken a fishing trip.
4. Why is river transportation cheaper than railway transportation?
5. What causes floods?

SOME THINGS TO DO

1. Find pictures of mills where a water wheel or dam is shown.
2. Make a small water wheel and place it so that a little stream will turn it.

23. LAKES, PONDS, AND SWAMPS

SOME THINGS TO LEARN

1. The difference between a pond and a lake.
2. The difference between inlets and outlets.
3. How lakes are formed.
4. Several uses of lakes.
5. Why men may wish to make lakes.
6. How swamps are made.
7. Why swamps are usually waste land.
8. How rivers destroy lakes.

How lakes and ponds are made. In some streams there are places where the surface is broad and the water perhaps is deep and seems to be standing still. Such a body of water is called a *lake* if it is large, or a *pond* if it is small. It may have several streams flowing into it, known as *inlets*, but the water flows out only at the lowest point or *outlet*.

Lakes are found wherever there is an obstruction in the river's course. The water cannot flow on until the low place has been filled to the level of the outlet. At the outlet the water drops to a lower level and keeps on its journey downhill. Any boy who has made water dams knows how lakes are made, and how the dam may be swept away when the water breaks through.

In certain parts of our country many lakes are found. These lakes vary in size from tiny little ponds, just big enough for sailing toy boats, to lakes so large that it takes many hours to cross them on a fast steamboat.

How lakes are useful. Lakes are very useful. The large ones may be important trade routes over which vessels may sail in any direction. Water is cooler than land in the summer. Hence the edges of lakes where the winds bring cool air ashore make pleasant places for summer homes (Fig. 55). Lakes also furnish water for use in large cities.

Lakes keep water from running away from a region too rapidly after a rain, because the water has to pass through a small outlet and cannot all go out at once.

After a very heavy rain or when a deep snow melts in the spring, the water in a lake often rises quickly in height. As the water slowly makes its way through the outlet, the level of the lake gradually falls.

Sometimes men make lakes by building a dam across a large stream. The water from such a lake is often used to turn wheels in mills or to supply a city or town with drinking water. It may also be turned into ditches and carried down over the land, where it waters or *irrigates* plants, vegetables, and fruit trees.

How lakes and ponds are destroyed. Most lakes get their supply of water from rivers. When a river flows into the quiet waters of a lake it drops its load (Fig. 49).



FIG. 55. A lake used for recreation. This is a lake high in the Rocky Mountains, and the building is a hotel. Why would this be a good place to spend a vacation? What leads you to think that many people go to this place?

This slowly fills up the lake and makes it shallower. The water flowing out of a large lake usually is very clear, because the small rock particles have been left behind.

Most lakes are drained by rivers which flow rapidly, and thus as they flow along quickly make their valleys deeper. In the course of time the outlet stream may cut down its bed so that the lake is drained. So you see that the streams which flow into a lake and the stream which flows out of it work together to destroy it.

The cause of swamps. As lakes slowly become filled with silt, plants spring up in the shallower parts until finally the lake is almost gone. In its place we have a soft, wet *swamp*. Swamps are also often found beside streams or along the shores of large bodies of water (Fig. 56).

Swamps are usually waste land, because they cannot be used for farming. They may, however, become forest covered in time. Large swamps, such as are found in several parts of our country, make cross-country traveling difficult and keep much land from being used.



FIG. 56. A swamp on the margin of a lake.

What shows that the water is shallow near the shore?

How are lakes filled up?

Why does one need a flat-bottomed boat on such a lake?

Do you know what kinds of birds like to live near swamps?

Can you name some plants that grow in swamps?

SOME RELATED PROBLEMS

1. What sports can be enjoyed on a lake in summer? in winter where it is cold?
2. How are dams made strong enough to hold back the waters of a river?
3. How may swamps be made into good farm land?

SOME THINGS TO DO

1. Make a small dam in the street or along the roadside after a rain. See if you can find an inlet.
2. Let the water run over the dam in one place, and notice how the pond becomes shallower as the outlet becomes deeper.

HOW THE SOIL HELPS EVERYBODY

24. HOW SOIL IS MADE

SOME THINGS TO LEARN

1. How soil particles vary in size.
2. Three things that help rocks to decay.
3. How plants get food from the soil.
4. Why plants need a great deal of water.
5. How plants are able to stand erect.
6. What we get from the soil.

What is soil? We have already learned about the little bits of rock that are being carried along by every stream. These small particles have come from the land and were once part of the solid rock. Everywhere on the surface of the land we find these fine rock bits which make up most of what we

call the *soil*. Plants and trees grow in the soil, and hence the soil helps everybody, because we all must have food that comes from plants.

How large soil particles are. The small bits of rock in the soil may vary a great deal in size. Sometimes they are so small that we may pick up many thousands of them in one handful. Usually, the finer the particles are, the richer the soil is. This is one reason why the soils of deltas and alluvial plains usually can grow such good crops.

How rock decays. Everyone knows that if a piece of iron is left out in the wet it soon rusts, and the surface can be easily rubbed away. We say the iron has rusted or decayed because of the weather. The new shingles on a house soon turn gray, and in a few years they may be so worn out that the house has to be shingled again. All these changes made by the weather are called *weathering* (Fig. 57). As rocks decay with the weather they form differently colored soils. The surface of the land may be red, black, gray, or brown, according to the color of the soil. The rivers, which are constantly carrying away some of the soil particles, often become the color of the soil they carry. Rocks are broken up in many other ways. In the daytime when the sun shines brightly the rocks become heated. This causes them to become a little larger. At night when

they cool off, they again become smaller. As this heating and cooling goes on day after day and year after year, many cracks begin to appear, and gradually the surface of the rock becomes broken (Fig 57).

Water also helps to make soil. If water soaks into the cracks in the rocks and freezes, the ice pushes the pieces of rock farther apart and causes them to break. If it freezes and thaws many times during the winter, a good-sized rock may be shattered to pieces by spring. In some parts of our country the farmers plow, or turn over some of the soil in the fall, so that the freezing and thawing of winter will help break up the rock bits and make the soil finer and richer and better for growing plants.

25. WHY SOIL IS IMPORTANT

SOME THINGS TO LEARN

1. How plants are fed.
2. Why plants have long roots.
3. Why soil is so valuable to us.

How the soil feeds plants. The plants which are food for us and for so many animals grow in the soil. Plants, like children, must be fed in order to grow. They get most of their food from the soil by the help of the water in it. The water in the soil has plant food dissolved in it, just as salt or sugar is dissolved in water. This food has been dissolved from the soil particles. The water is taken up by the plant roots, and as it passes up through the plant on its way to the leaves the plant is fed by the food dissolved in the water. The water passes out again through the leaves into the air.

It takes a great deal of water to furnish enough food for a corn plant or even for a little clover plant. This shows how important it is that the soil be kept moist during all the weeks in which the plants are growing in it.

Plants send their roots into the ground, not only to get food and water, but also to secure



FIG. 57. Weathered limestone. The large openings in the limestone have been caused by weathering. Plants growing in these openings and water flowing through them are slowly but surely breaking the rock into smaller and smaller pieces.

a firm hold on the soil so that the winds will not blow them over.

The value of the soil to us. The soils of the world furnish us with food, clothing, and many other things. A person who lives in a large city may see very little of the soil or the rocks, and so may find this rather hard to believe. Yet cows furnish us with milk, and they get their food from grass and other plants which grow in the soil. The soil produces the vegetables and the fruits we eat. The meat which cattle, sheep, and hogs yield is made from food which comes from the soil. Even the bread and sugar we eat, the tea and coffee we drink, and most of the other things we have on the table every day may be easily traced back to the soil (Fig. 58).

Our clothes also are products of the soil. Cotton comes from cotton plants grown in the soil, and wool comes from sheep, which depend on grass for food. We cover our feet with leather made from the skins of animals that were fed on grass. Even the paper of this book is a product of the soil, because it was made from the wood of trees that got their food from the soil. Thus we see that soil is of the greatest importance, for it furnishes us so many things we use every day.



FIG. 58. A herd of dairy cows. These cows furnish milk that is sold for food. The tall, round building is filled each year with corn cut up fine to be fed to the cows in winter. Do you know what this building is called? How does this picture show the importance of soil to the farmer?

26. WHY ALL SOILS ARE NOT EQUALLY GOOD FOR CROPS

SOME THINGS TO LEARN

1. Why crops cannot be grown everywhere.
2. Why soils on steep slopes are usually thin.
3. What do we usually find growing on steep slopes?
4. How good soils may become poor.
5. How poor soils may be improved.

Why crops cannot be raised everywhere.

Not all soils will raise good crops, because some slopes are so steep the soil slips downhill as fast as it is formed (Fig. 46). On such slopes the soil is always very thin.

Sometimes when the slopes do hold the soil they may yet be so steep that it is not easy to plow and plant them. Hence the steeper slopes are often left for trees and grass. In the summer season cattle and sheep can climb the slopes and harvest the grass for themselves.

Often very steep slopes are just bare rock and have no plants growing on them except where certain kinds of trees may grow in soil that has partly filled a crack or hollow in the rock.

So you see that the gentler slopes and valleys are most used for the growing of

crops; the slopes too steep to be planted are usually covered with pastures or forests and often the very steep slopes are bare (Figs. 39 and 59).

How good soils become poor. Sometimes good soils, being deep and fine, are easily washed away by the rains. Each little stream may cut a tiny valley as it rushes along, and in a few years a rich field may become a rough bit of land where no crops of value can be grown.

Sometimes soils get worn out because the same kind of crop has been grown on them year after year. Yet these soils may still be good for raising other crops, because some plants thrive on one kind of food, others on another.

How poor soils may be made good again.

Sometimes a farmer may keep the soil in place by growing some kind of grass there. The grass prevents the water in the little streams from running down the steep slope so rapidly as to cut gullies. The grass roots also help to hold the soil particles in place.

Some farmers keep their soils in good condition by changing the crop each year for a certain number of years. In this way they come back in a few years to the first crop. Another way to keep soil rich in plant food is to mix with it decaying leaves, grass, or straw, or some other form of *fertilizer*.

SOME RELATED PROBLEMS

1. Why are some soils darker colored than others?
2. Name five plants that produce food for us, and two plants from which clothing is made.
3. Give two reasons why farmers cultivate their crops.
4. How will stirring the soil help it to take in more water when it rains?
5. Why is irrigation such a help in certain regions?
6. How may garden soils be kept rich?

SOME THINGS TO DO

1. Find a bright piece of iron. What can you do with it that will cause it to rust or decay? How does this show that a farmer or a gardener should have a building in which to keep his tools?
2. Get a handful of rich garden soil and see how many kinds of material you can find in it. Try to find bits of rock, sticks, and leaves. Does it contain any moisture? Is there any air in it?
3. See if you can find some rocks, bricks, or wood that are weathering.
4. Try to raise some plants in a soil you have made by crushing some rocks and adding some water and well-decayed leaf mold.
5. Withhold water from a house plant for several days and see what happens; after this give the plant some water and see what happens then.
6. Try to find some pictures which show the effect good and poor soils have on the growth of plants.

WHAT THE AIR OR ATMOSPHERE DOES FOR US

27. WHY AIR IS NECESSARY TO US

SOME THINGS TO LEARN

1. Three ways in which we know there is air.
2. Five ways in which air is useful.

How we know there is air. The air or *atmosphere* is all around us. Although we are unable to see it, we can feel it blow against our faces and we can see the motion of the trees and grasses as they are moved by the wind. When we see our flag flapping and snapping, we know this is caused by the air as it passes by.

In much the same way as pebbles, sticks, and small particles of rock are carried along by running water, so the air carries along leaves, seeds, and particles of dust. When the sun shines into a partly darkened room through a small opening in the curtain, we may see thousands of small dust particles dancing in the air.

FIG. 59. Wooded and grass-covered slopes.

Once this whole surface was covered with woods.

Why did people cut the wood from the lower slope and not from the upper slope?

Note how the lower slope is gullied. What caused this?

Can you follow the route of the road?

Why is there no road running over the hill?

Notice the trees growing along the road and around the house. Why have they been allowed to grow there?

How will the streams change the surface of this region?





FIG. 60. **Yachting.** These sailboats are used for pleasure only. Racing with sailboats is a favorite pastime in some places. What other use may be made of sailboats? In what other ways are boats pushed through the water?

How necessary air is to life. We usually forget about the air unless it is moving briskly or has in it some unusual odor. Yet we know air, even though it is quiet, is absolutely necessary for us because we breathe it. We eat frequently, we drink several times a day, but we must breathe all the time. Even when sleeping we breathe as regularly as we do when we are awake. If our supply of air were stopped for only a few minutes, we could not live. A good swimmer can stay under water for a short time by "holding his breath," as we say. Then he has to come to the top and take several long breaths.

Air is just as necessary for animals as it is for us. Those animals that live in the ground get air through the holes that reach to the surface. Fishes get their air from the water, but they do not breathe as we do. They get their air through their gills. Anyone who has ever watched a fish in the water must have seen its gills moving back and forth through the water like slowly waving fans. Plants must have air in order to grow and be healthy. A plant shut up in a room filled with bad air soon droops and looks sick.

Some other uses of air. Not only is the air necessary to plant and animal life, but it is useful in many other ways. We have seen how air helps in making soil (Fig. 57).

It is air that helps a fire to burn. Air moves the clouds along and helps to hold the heat that we get from the sun. It is useful, too, for filling footballs and automobile tires. It turns windmills, it blows sailboats along, and it enables birds and airplanes to fly (Fig. 60).

28. MOISTURE IN THE AIR

SOME THINGS TO LEARN

1. How air takes up moisture.
2. Where the air gets its moisture.
3. How the air gets rid of the water vapor in it.
4. What causes clouds and fogs.
5. What causes dew and rain.
6. Why we sometimes have frost or snow instead of dew or rain.

How moisture gets into the air. A few drops of water on the palm of your hand soon disappear. Damp or wet clothes hung out in the air soon become dry. The water has disappeared into the air—we say it has evaporated. The drops were broken up by the heat of your hand or of the sun into a lot of very small particles, so small you could not see them, and were carried away by the air.

Everyone knows that boiling water will evaporate much more quickly than cold water. The heat causes this. Water in this way becomes a part of the air.

The air everywhere contains some moisture. When the air is warm it can take up more moisture, and take it up more rapidly, than when it is cold. That is one reason why the surface of the ground is usually drier in the summer than in the winter. Air in motion will cause damp surfaces to dry quickly. That is why it is usually easier to dry clothes out of doors than in the house. The warmer the air, the more moisture it will hold.

How moisture gets out of the air. But when the air becomes cooled again it cannot hold so much moisture, and the water vapor, which we cannot see, forms mist or drops

of water and perhaps falls to the ground as rain. When the water-vapor particles in the air are brought together so we can see the moisture again, we say that the water vapor has been condensed (Fig. 61).

Everyone has seen drops of water collect on the outside of a pitcher of cold water on a hot summer day. This happened because the cold pitcher so cooled the air around it that the air could no longer hold all the vapor it was carrying. The little water particles came together on the cold pitcher and made the drops of water we see.

Whenever moisture in the air is cooled enough, the vapor is condensed into drops. Air is cooled whenever it is forced to rise (Fig. 61). Did you ever watch a cloud grow on a summer day? A cloud is only a lot of small drops of water floating along in the air (Fig. 62). The cloud grows in size as the rising air cools and adds more drops to it. When the cloud grows dark and dense it usually means that rain will soon fall. Rain is only drops of

water which are so big that they can no longer float in the air and therefore fall to the ground.

Sometimes clouds are formed very near the ground. Then all about us we can see the little drops of water, and we say there is a fog. Fogs often form in the night, but during the day, as the air grows warmer, the fog may disappear by evaporation.

At night, during the warmer seasons of the year, water vapor is often condensed into small drops of water known as dew. It is dew that makes the grass wet on summer mornings.

In the cooler seasons, when the water vapor condenses on very cold objects, we then have frost instead of dew or fog (Fig. 63).

If the raindrops are frozen before they reach the ground, we have sleet or hail. Should the air be quite cold for some time, large, white, frozen crystals of water come floating down to the earth, and we say it is snowing.

FIG. 61. Drifting mists on a mountain slope.

At the bottom of the picture we see a lake and just beyond a forest.

In the upper part of this picture we can see the mountain tops.

What is the meaning of the white area across the middle of the picture?

If you cover this white area in the picture with a wide ruler it may help you to understand what it is.

What causes the mists to drift about?

What name might you give to the mists?





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FIG. 62. The birth of a cloud.

The white area on the side of the mountain is the beginning of a cloud.

The air is moving up this side of the mountain.

What caused the cloud to form here? What may cause it to become larger?

Can you trace the line which separates the trees from the water?

Can you tell why the mountain, the trees, and the cloud are all reflected so clearly?

SOME RELATED PROBLEMS

1. Why is it that clothes will dry more rapidly on some days than on others?
2. What causes the little fog near the spout of a teakettle of boiling water? Why does it disappear so quickly?
3. On a cool day why does moisture collect on the windows of a laundry?
4. Why can you sometimes "see your breath"?
5. What becomes of the clouds?

SOME THINGS TO DO

1. Spread half a dozen drops of water on the palm of your hand. Wave your hand so that the water will dry quickly. How does it feel?
2. Blow your breath against a cold windowpane and try to explain what you see.
3. Hold your breath for ten seconds. Why is this so hard to do? What does it show as to our need of air?
4. Put some cold water into a drinking glass, and warm it slowly. Notice the bubbles that collect on the side of the glass. What do you think these bubbles are? Where do they come from?
5. Put a lighted candle into a glass jar, and cover it up tightly. What happens to the flame? Can you explain this?

29. WINDS AND THEIR VALUE

SOME THINGS TO LEARN

1. Which is lighter, warm or cold air.
2. What heavy air does to light air.
3. Why air moves along the earth's surface.
4. What wind is.
5. How wind can run machinery.
6. How wind can move a boat or fly a kite.



FIG. 63. Frost crystals. During cold weather beautiful frost crystals often form on the grass, on the fences, and even on the windowpanes. This is caused by the condensation of the water vapor in the air on these cold objects.

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FIG. 64. A dirigible balloon. A balloon floats in air just as a piece of wood floats in water. Why does a balloon rise in air? What can be the use of a great balloon such as the one shown in the picture?

What causes winds. When a small, light piece of wood is pushed under the water it quickly comes to the surface again. It does this because the water, being heavier than the wood, pushes in from all sides and lifts it upward (Fig. 64).

On a still day you have seen smoke rise from a bonfire. The smoke rises because the hot air over the fire is rising and carrying the smoke with it (Fig. 65). Hot air rises for the same reason that a piece of light wood rises in water. The hot air above the fire is much lighter than the colder air around the fire, and so the hot, light air is pushed upward by the cold, heavy air. Warm, light air is always being pushed about by cold, heavy air. Air moving along the earth's surface is called wind.

FIG. 65. A smoke screen.

Smoke screens are often used in time of war.

The dense clouds of smoke are carried along by the air, hiding the boats you see from the enemy on the other side.

In what way, then, is the smoke screen a protection?

Why will the smoke screen not remain in the same place?

The work the winds do. The wind can be used in many more ways than quiet air. It turns windmills (Fig. 66) to pump water or to run machinery in mills; it blows against a boy's kite and makes it rise high in the air.

The captain of a sailing vessel depends upon the wind to push his vessel along (Fig. 64). A sailing vessel is helpless when the wind stops blowing. The wind blows seeds from one place to another. It carries away the smoke from large cities, and does many other things that are useful.

But the most important work of the wind is carrying moisture from one place to another. The air that has taken up moisture from a large body of water moves over the land. As it cools it loses its moisture, which falls as either rain or snow. The water in the soil, which helps to make our crops grow, and the water that fills our streams and our wells have been carried to the land by the winds.

30. THE WEATHER AND ITS CHANGES

SOME THINGS TO LEARN

1. What we mean by weather.
2. About different kinds of weather.

What is weather? The air may be cold at one time and warm at another. Sometimes it is full of moisture; at other times it



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FIG. 66. A windmill in a cattle country.

The windmill pumps water for the cattle. What makes it go?

Do you think this is a moist or a dry country?

is dry. One day the air may be very quiet, the next day a strong wind may blow. All these changes of the air we call *weather*. The weather is always interesting to us because what we do usually depends upon it.

If the weather is cold we try to warm the air in our houses. We usually do this by means of a stove or furnace, or perhaps a fireplace, which sends out warmth freely to the near-by air.

The air outdoors gets its heat from the sun. For this reason the air is usually warmer in the daytime when the sun is shining than it is at night.

Kinds of weather. If there are few clouds in the sky we say the weather is fair or clear. When the sun is hidden by clouds the weather is cloudy, and if it snows or rains it is stormy.

Most of our storm clouds are within a mile of the earth's surface, although some clouds are more than seven miles above us. Above the clouds the sun or stars shine brightly all the time. One who climbs to the top of a high mountain, or takes a ride in an airplane, may enjoy clear weather while below him in the sunlight heavy clouds are spread out like a beautiful, silvery sea.

31. HOW FAIR WEATHER AFFECTS US

SOME THINGS TO LEARN

1. How the weather may change as we climb a mountain.
2. Why we like summer fair weather and winter fair weather.

The fair weather of summer. In summer fair weather is usually warm and the sky not so clear as in our fair days in autumn. Often the sky is hazy or blue in appearance.

We have many days in summer when the air is hot and still. These are fine days for sports and play (Fig. 67).

On warm days, when the air is moist but yet not moist enough for rain, everything feels damp. Our clothes cling tightly to us, and it is hard work to keep cool. We call such days sultry, and we do not like to work much because we get so warm. On a sultry day plants wilt. Cows and sheep find shady places in the pasture and lie down, or maybe wade into a pond or brook (Fig. 68).

Another kind of fair weather in summer is hot and dry. On such days plants may die because there is so little moisture in the air they do not get enough water. The farmer's crops may be dried up. There is,



FIG. 67. Summer sports. What do you see that makes you think it is summer? What may the boys do when they tire of fishing? Name five other sports that children like in summer.

however, very little of this kind of weather in those parts of the country where most of our people live.

Autumn fair weather. The fair weather of fall, or autumn, is often the pleasantest of all the year. The sky is clear and bright, and the days are just warm enough to be comfortable. The leaves are beginning to show many beautiful colors, and the squirrels are storing away their winter supply of nuts. This is the best time of year for long walks over the hills and through the woods to gather seeds, gay-colored leaves, nuts, and flowers. These are called the bracing autumn days. They make us feel full of life and as glad to work as to play.

The nature of winter fair weather. In our country the fair weather of winter is not at all like the fair weather of summer. The winter sky is beautifully clear, especially at night, when the stars twinkle and shine so brightly that even without the moon the night is not dark.

The winds of winter are very often cold, especially in the northern United States. They force the heat out of the houses so that people find it difficult to keep warm. Farm animals have to be kept in buildings, for, even when it is sunny, it may be too cold for them out of doors. In certain sections of our country there are many such days in winter; sometimes several come together. Such a spell of bitter cold weather is called a cold snap.

Not all of our winter fair weather is windy. There are many cold fair or bright days with no wind at all (Fig. 69). In many places this is fine weather for skating. The ice on the rivers is frozen smooth and is so thick there is no danger of its breaking.

32. HOW WE ARE AFFECTED BY STORMY WEATHER

SOME THINGS TO LEARN

1. Why summer storms are helpful.
2. About harmful spring and summer storms.



FIG. 68. A sultry summer day. Why do the cows seek the shade on a sultry day? Tell how such a day affects you. Why is a sultry day favorable for rain?

3. About the damage done by ice storms.
4. What snowstorms are like.
5. The meaning of windward and leeward sides.
6. Where snowdrifts form, and why they sometimes make traveling difficult.
7. Why we are so interested in the weather.

The nature of spring storms. We have learned that there are many different kinds of fair weather during the year. There are also many different kinds of stormy weather.

There is more cloudy weather and more rain in spring than in summer. Sometimes the rains last for several days together. It may



FIG. 69. A winter scene. Snow seldom falls in some parts of our country. What pleasure can you get out of snowy weather? Tell about a snowstorm you have been in.



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FIG. 70. A large summer cloud. Why is the top of this cloud white and the under side dark? Of what is the cloud made? What is a cloud at the earth's surface called?



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FIG. 71. After an ice and sleet storm. Ice and sleet storms may be very harmful. Explain how the trees and wires have been broken down. What other harmful things may such a storm do?



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FIG. 72. A moist, heavy snow. Moist, heavy snows fall only on warm winter days. Why is the snow not piled in drifts? How deep do you think this snow is?

rain gently without much wind. Sometimes, however, the wind blows and the storm is severe. At such times both men and animals must seek shelter from the storm.

Rains in early spring are valuable because plants and seeds are just waking up from their long winter sleep and are beginning to grow.

The weather in spring is very changeable. Within a few hours we may have several heavy rainstorms with bright sunshine between them. We call such weather showery (Fig. 70). On days of this kind it is wise to carry an umbrella, for it may shower any moment, although it looks as if the clouds might clear away.

The nature of summer storms. The storms of summer do not last so long as those of springtime. The rains are usually short and heavy, with thunder, lightning, and a great deal of wind. During these storms so much rain may fall in a short time that the streets and gutters are filled with water and the small rivers and creeks overflow their banks. Dams and bridges may be swept away. Crops on the hillside may be washed out, and grain, grass, and other crops are sometimes beaten flat. During some of these storms a part of the rain sometimes falls as solid pieces of ice, or hailstones. Hailstones often do a great deal of harm, for they break window glass, cut plants to pieces, and even injure animals.

Why ice storms are unpleasant. Sometimes in winter in the northern United States the air is warm enough for rain, but the ground, the trees, and other objects are so cold that the rain freezes on them as it falls. When the wind blows hard, much damage may be done, for the weight of the ice, together with the wind, often breaks down trees, telephone poles, and telegraph and telephone wires. The streets and sidewalks may become so slippery that it is difficult and even dangerous to try to walk on them. Such storms are known as ice or sleet storms (Fig. 71).

If the ice stays on very long the birds that stay in the North during the winter

may suffer, for the seeds they eat are all covered with ice. When the clouds break away, everything sparkles and gleams in the sunlight and makes a beautiful and dazzling picture.

Snowstorms. In the northern part of the United States many storms in winter bring snow. A snowflake is made up of many tiny parts clinging together, as we may see if we look sharply. Each of the small parts is a beautiful six-sided crystal. We may easily see these crystals if we catch a few flakes on our coat sleeve or on a black cloth.

If it snows on a warm winter day when the air is still, the snow comes down in great, feathery flakes. Moist snow, falling in large flakes, comes down so evenly that it covers everything with a soft white blanket. The covering on the telephone and telegraph wires and on the branches and trunks of trees is often several inches thick (Fig. 72). Snow of this kind makes fine sleighing and fine coasting. When the snow is soft and deep one can travel more easily on snowshoes than on a sled. A light rain on such a snow, followed by freezing weather, makes the best coasting, for then the snow is covered with a crust of ice (Fig. 73).

When snowstorms are unpleasant. The snowstorms we do not like are those which come when the weather is cold and windy. Then the snow does not fall in flakes but in fine particles of ice which are driven along by the wind. Sometimes the air is so filled with this fine snow that one can hardly see at all. The wind drives the particles against one's face so hard that they prick like needle points. In such a storm the snow usually piles up in great drifts, blowing away from the windy or windward side of an object and piling up on the other or leeward side. Roads open to the wind may be swept bare, while those on the leeward side of fences or hills may be filled full of snow from fence top

to fence top. One can easily see why traveling is difficult after such a snowfall.

Not only public roads may be drifted full of snow, but railroads in some places may be covered so deeply that the most powerful engines cannot get through. Often trains are snowed in for several days until an engine comes with a snowplow and clears the tracks.

Why we talk so much about the weather.

We have learned that the lives of animals, plants, and men depend in one way or another upon the land, the water, and the air.

A change in the weather often causes us to alter our plans for work or play. In



FIG. 73. A fine winter sport. When children are coasting, the sled often upsets and then all take a sudden tumble in the snow. What kind of land surface is best for coasting? Why do the boys have caps that pull down over their ears?

many places people are so used to watching the weather that it is the first thing they speak about when they meet a friend or a stranger.

SOME RELATED PROBLEMS

1. Why do farmers like to have their barnyards on the south side of the barn?
2. Why do evergreen trees often bend over with snow in the winter, while other trees do not?
3. How do winter storms sometimes affect railroad and street traffic?
4. Why are snowsheds or snow fences necessary along some railroads?
5. How does snow protect plants?

SOME THINGS TO DO

1. Put the neck of a large bottle in some water. Now warm the bottle with a match, a candle, or your warm hands. Why do bubbles of air come out of the bottle?
2. Make a small windmill to show how the wind is able to pump water or run machinery.
3. Make a kite and show why the wind pushes it up instead of down.

HOW WE AND OUR NEIGHBORS
HELP ONE ANOTHER

33. WHAT OUR NEIGHBORS DO FOR US

SOME THINGS TO LEARN

1. Why so many people should be considered our neighbors.
2. Some things our near-by neighbors do for us.
3. Some things far-away neighbors do for us.
4. Why we cannot produce all the things we need.
5. Why all our neighbors are not doing the same kind of work.
6. What we mean by an "occupation."

Who our neighbors are. We have already learned that usually in the country each house is the home of a family, and that often houses are found in groups forming a neigh-

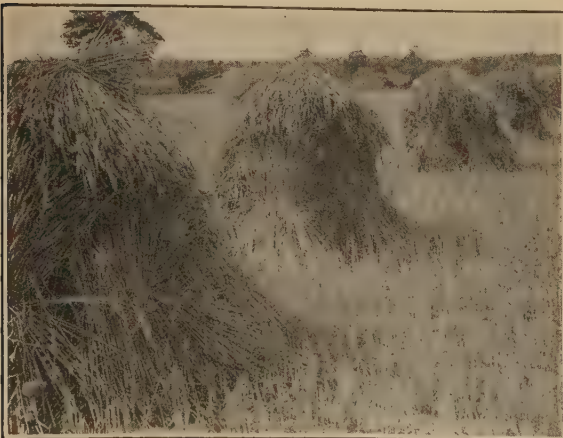


FIG. 74. A field of harvested wheat. The wheat is cut and tied into neat sheaves or bundles by a machine known as a binder. Notice that the grain is all at the same end of the sheaves. Why are the sheaves placed in shocks with a cap sheaf on top? What will the farmer do with the wheat that he does not need for his own family?

borhood. The people who live in the houses are neighbors, that is, they live near one another. People living near together should be able to help each other in many ways. But sometimes the people who help us, live a long way off; so today a neighbor is not so much some one who lives near by as some one who in some way helps us, although he lives at a distance.

How we depend upon our neighbors.

Few of us ever stop to think how much we depend upon people outside our own homes for the things we need every day. The people who dwell in cities could not live without the food grown by their neighbors in the country. The people in the country could not easily get along without the clothing, machinery, and other articles made by their neighbors in the cities. Thus we see how much the people in every part of our country depend upon their neighbors.

About one hundred years ago most of our people lived on small farms, and it was possible for them to secure food and wool for clothing from their own land. There are places in the United States where people still raise nearly all their food. As a rule, however, most of our food is brought to us from some distance, especially coffee, sugar, oatmeal, and other cereals. The people in large towns or cities secure many of these necessities from the stores. Some articles, such as bread, milk, and vegetables, may be brought regularly to their doors. The bread is made in a bakery from flour; and the flour is made in a mill from wheat that was raised on a farm (Fig. 74).

Some of the food we need every day is produced by neighbors far away and some by neighbors near our homes. Those who live on farms in our own country can raise much of the food we need, but certain articles, such as coffee, cocoa, and spices, do not grow in the United States, but come from far-away countries.

FIG. 75. Loading hay.

In the winter the farmer needs hay to feed to his cattle, horses, and sheep.

Where does he store the hay?

Notice the ridge, or windrow, of hay ready to be loaded.

Why is it helpful to have much sunshine during the haying season?

Part of the farmer's summer work is to raise crops which will help feed other people in the winter.



Allen

Kinds of work our neighbors do. In some parts of our country the people are busy on their farms raising crops or animals.

In other places we find that most of the people are making cloth or clothing, or perhaps locomotives or automobiles. In some sections men are busy getting coal or iron ore out of the earth. Many people put in all their time fishing. Others do nothing but haul or transport necessary products to the people who are to use them. But everywhere we find people busy at some kind of work that is needed.

We call the different kinds of work our neighbors do *occupations*. By working at some occupation a person makes a living for himself and at the same time helps other people, who in turn help him. Although there are so many different kinds of work that people can do, these can all be grouped into a few great classes.

34. NEIGHBORS WHO PRODUCE FOOD

SOME THINGS TO LEARN

1. The names of two food-producing occupations.
2. The names of ten kinds of food that are raised on farms.

Agriculture as an occupation. The most important occupation of all is *agriculture*, for everyone uses products from the farm every day. This would be impossible if there were not many other workers who help the farmer get his products to the places where people need them. Some farmers raise wheat to be made into flour; others raise corn to feed animals; others grow cotton to be made into cloth and clothing. The farmer also raises animals, such as hogs, cattle, horses, sheep, and poultry. To these he feeds much of the grain and hay which is produced on his farm (Fig. 75). Milk, butter, and cheese all come from farms where cows are raised.

In some places the farmer uses his land to raise vegetables, such as onions, beans, cabbage, tomatoes, peas, or spinach, or perhaps he sets it out in orchards of apple, pear, or other fruit trees. These are the most important of the products our farmer neighbors raise.

In some parts of our country the land is best suited to growing grass for animals to eat. Here the raising of cattle or sheep for food, or sheep for their wool, is usually the leading occupation. We eat a great deal of meat every year, and it takes many,



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FIG. 76. A cattle ranch.

The man on horseback is the herder who takes care of the cattle.

Why are trees valuable on a cattle ranch?

Why does it sometimes take a lot of land to feed a small number of cattle?

Of what use is the lake?

See if you can find the name of this kind of cattle.

many animals to furnish enough for all the people in our country (Fig. 76).

SOME RELATED PROBLEMS

1. Name five crops you have seen growing on a farm or in a garden.
2. Why is the raising of cattle so important?
3. Name five animals that eat grass; name five that do not eat grass.
4. What is the difference between beef and dairy cattle?

SOME THINGS TO DO

1. Find pictures showing how work is done on a wheat farm or a dairy farm.
2. Find pictures of ten different farm and garden implements, and be able to tell for what each is used.
3. Find pictures showing five ways in which farm animals are used.

35. NEIGHBORS WHO FURNISH US PRODUCTS FROM THE EARTH

SOME THINGS TO LEARN

1. Why quarrying is important.
2. About three things the miner gets from the earth.
3. About the uses made of the products of miners.
4. How petroleum is secured.
5. Why so many people use petroleum.

How rocks are used. Not all the things we need come from the soil. Many of them come from the rocks beneath the soil. The occupation of taking useful rocks from the

ground is called *quarrying* (Fig. 77). The rocks that are quarried are of many kinds and are used in many ways. Some are used for making buildings or as paving blocks in city streets. Still others are broken up to be used in making hard roads.

Others are polished or carved and used for monuments or for the interior finish in fine



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FIG. 77. A granite quarry. Granite is a very hard rock used for monuments and for building purposes. How deep do you think the quarry is, judging from the size of the man on the ledge near the middle of the picture? Why do you think this would not be a good farming region?



Ewing Galloway

FIG. 78. Working in a deep copper mine. Notice how the miner picks at the rock to get out the valuable copper. What are some of the most important uses of copper? For what is copper wire often used?

buildings. Another kind of stone can be easily split into thin sheets, and is used for roofing or as blackboards in schools. Do you know what we call this stone?

The work of the miner. Other valuable materials besides rock are secured from the ground. The gold, silver, and copper which we use for money and in many other ways, the iron from which we make our knives, nails, machinery, and tools, come from the ground. Coal, which we burn to get heat and power, is also dug from the ground.

FIG. 79. A field of petroleum and gas wells.

The high towers are called derricks.

Such towers are needed in handling the machinery that is used for drilling oil and gas wells.

How many derricks can you count on this small area?



Ewing Galloway

The work of the men who get all these different materials from the earth is called *mining* (Fig. 78).

Other valuable earth products. Some useful materials beneath the surface of the earth do not have to be quarried or mined. Petroleum, from which we get kerosene, gasoline, and many other useful products, is an oil that can be pumped to the surface like water from a well (Fig. 79). In some places gas is brought to the surface by means of a gas well which is drilled or bored into the ground.

But the rock product which is most useful and necessary, because it is needed every day by plants and animals, is water.

36. NEIGHBORS ON THE WATER AND IN THE FOREST; HUNTING, FISHING, AND LUMBERING

SOME THINGS TO LEARN

1. What the hunter and trapper get for us.
2. Why fishing is a necessary occupation.
3. Five ways of using lumber.

Our neighbor, the fisherman. In some parts of the world the people make a living by catching fish from the seas, lakes, or rivers to be sold as food. *Fishing* is an important occupation, because many people eat a great deal of fish.

What the hunter and trapper do. In our country few men now work at *hunting* and

trapping, because it is so well settled that few wild animals are left. But in many parts of the world, where fewer people live, hunting and trapping are the chief occupations, especially in the winter months. Furs are worn today more perhaps than they ever were before, but not all of them come from wild animals.

Lumbering and forest products. The forests of our country produce wood from which are made houses, furniture, paper, tools, and many other articles we all use in our daily life. Cutting down trees and sawing the logs into lumber is known as *lumbering* (Fig. 80). Most of the lumbering is done in winter.



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FIG. 80. A log train. Thousands of men work in our forests, cutting the trees from which lumber is made. Are there any trees here that are too small for lumber? How might these small trees be injured? Why should the small trees especially be protected?

So many forest trees already have been used that lumber is getting very scarce and high in price. People are, therefore, learning to use other materials in place of wood. At one time our railroad cars and all our ships were made of wood. Now the best cars and the biggest ships are made almost entirely of steel, which is in turn made from iron. But still so much wood and lumber are needed that in many sections our forests are being cut down very rapidly, and will soon be used up.

SOME RELATED PROBLEMS

1. Why not use iron or wood for money instead of gold, silver, or copper?
2. What are some of the things you use every day that come from mines?
3. Make a list of the things in your home that are made of iron and of wood.
4. Examine two buildings to find out the materials of which they are made and, if possible, where the materials came from.

SOME THINGS TO DO

1. Name five kinds of trees that grow near your school, your home, or in the parks.
2. Bring to school three kinds of wood and tell for what purpose each is used.
3. Bring pictures of quarries and specimens of interesting rocks and minerals, such as granite, asbestos, slate, and mica.

37. NEIGHBORS WHO TURN RAW MATERIALS INTO USEFUL ARTICLES; MANUFACTURING

SOME THINGS TO LEARN

- i. The meaning of manufacturing.
2. What is meant by "raw materials."
3. The names of three raw materials produced by the farmer and the miner.

What manufacturing is. Few things are ready for use in the form in which we first see them. Wheat must be changed into flour, cotton into thread or cloth. The iron as it comes from the ground is not ready to be made into tools. Even the oil, when it comes to the surface, is neither kerosene nor gasoline.

Most things have to be made over into some other form before they are really useful. We speak of those things as raw materials which must be made or manufactured into useful products. This changing of so-called raw materials into finished goods ready for use is called *manufacturing*.

The paper on which this book is printed was made from wood. The machine on which it was printed is of steel that was once iron. Most of the making over of raw materials into useful things is done in large

buildings called factories (Fig. 81). The business of manufacturing is one of the greatest occupations, and it gives employment to thousands of people.

38. NEIGHBORS WHO BUY AND SELL GOODS; TRADE

SOME THINGS TO LEARN

1. Why we need so many kinds of goods.
2. About the work of a merchant.
3. Why everyone should work.
4. About some workers who do not produce raw materials or manufacture them into finished goods.
5. Why money is convenient.

The many things we need. But even after things are raised, or made, they are of little use unless the people who want them can get them. Getting goods from many places and selling them to people who want them is the work of the storekeeper or merchant. He makes a living and at the same time helps others. He is a useful neighbor, and is found at work in every place where people live in groups, however small the groups are (Fig. 82).



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FIG. 81. A room in a silk factory. The raw silk for the making of silk fabrics comes from across the ocean. The workers in this room are folding and wrapping silk cloth. What are some of the articles of clothing which these workers are helping us to get?

Why everyone should work. But no one can buy goods from a merchant unless he can pay for them. Almost everyone must work to make a living and get money with which to buy the things he needs. He sells his labor for money and then buys things with that money. Buying and selling we



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FIG. 82. View of the business section of a city.

A great many people work and make a living in cities and towns.

Why is a city a good place in which to build a store or a factory?

Notice the wagons being loaded and unloaded on the side of the streets.

Why are wagons and trucks so much used in cities?

Why are some of these buildings so high? Why do they have many windows?

call *trading*. It is really exchanging one thing for another of equal value.

Why we need money. Sometimes it is possible to exchange one thing directly for another thing, and no money is used in the trade. Farmers sometimes take their products to a store where they can get sugar, flour, coffee, shoes, or cloth in return. Usually, however, money is used because we do not often buy from the same person to whom we sell. The farmer, for instance, sells wheat to one person and buys his clothes from another. The teacher sells his labor to the town or city and, with the money he earns, buys goods from the merchants.

Once skins or shells were used instead of money. But as our country grew and people traded with others from a distance, we soon found that money was necessary. In every way money is more satisfactory. It will not wear out, will not spoil, and is easily carried about and exchanged for anything we need.

39. NEIGHBORS ENGAGED IN MOVING GOODS FROM PLACE TO PLACE; TRANSPORTATION

SOME THINGS TO LEARN

1. Three ways of transporting goods.
2. How wagons and automobiles are used in transporting goods.

3. The advantages of railway transportation.
4. Three kinds of water transportation.
5. About five important aids to commerce.

The need for transportation. We have learned that many of the things we need must be brought from far-away places. For this reason many people are engaged in the business of moving goods from one place to another. This business is known as *transportation*. There are many ways in which goods may be transported. The most important carriers are railroads, steamships, automobiles, trucks, and wagons.

We may travel or transport goods by land or water. On land we may walk and carry goods on our back. Or we may send our goods by wagon, airplane, automobile, or railway train (Fig. 83). There are places in the United States where the land is so rough, or the people so few, that nearly all transportation is by mules or pack horses (Fig. 84). In some of the most rugged mountain areas few people live, and explorers must carry their supplies in packs on their backs.

Why railway transportation is important. Railroad trains are usually used for carrying goods and passengers quickly over long distances, while for pleasure, or for moving goods shorter distances, horses, automobiles, and autotrucks are used.



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FIG. 83. A railway station in a farming region.

The five large buildings at the right are elevators in which grain is stored and then loaded into freight cars.

Often the farmer brings his grain to the elevator as soon as it is threshed.

What do you see in the picture that makes you think dairying is carried on in this region?

Why is milk carried on a fast freight train?

FIG. 84. A mule train in a mining region.

Oftentimes new mining camps in a mountain region cannot be reached either by railway or by trucks.

What are some of the things carried by a mule train of this kind?

Why do the mules follow the leader of the train in such a regular order?

Are mules more sure-footed than horses?

With what would the mules be loaded on the return trip?



Ewing Galloway

Railway trains, whether they use steam or electricity, usually run between places where there are large numbers of people and great quantities of freight to be carried (Fig. 83). This is why the large cities of our country are all connected by railroads.

Since a railroad train cannot climb steep slopes as easily as a horse or an automobile can, railroad routes often wind back and forth on their way over high mountains. It is only over land that is nearly level that railroads can follow fairly straight courses.

There are many thousands of miles of railroads in our country, and all of them are busy most of the time. The food alone that

is used in a large city in one day would fill the cars in several long freight trains. Everyone gets some help from the railroads, for they are the chief means by which goods and the mails are carried long distances in our country.

Transportation by water. Travel by water is either in steamships or sailing vessels, or by canal boats which are usually drawn along by horses or mules. These all move much more slowly than railway trains, and therefore, in this country, they are used mostly for carrying goods, such as iron or coal or wheat, which do not have to be used at once. Valuable goods, or those that would



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FIG. 85. Elevators and freight boats.

An elevator is a large building in which grain may be stored.

The grain is brought to the elevator either by rail or by the farmer and is to be carried away by boats.

Does the size of the elevator tell you anything about the size of the port?



Caulfield & Shook, Inc., Louisville, Ky.

FIG. 86. A scene on the levees along the banks of the Ohio River. These boats carry such things as coal, wheat, and other heavy materials that do not need to be delivered quickly. Why is river travel usually slow? Find a picture in this book showing a different kind of landing for a vessel. Why can this vessel be loaded as easily when the water is high as when it is low?

spoil quickly, are usually not carried long distances by boats in this country (Figs. 85, 86).

Other aids to trade and transportation.

In these days business must be done quickly; hence messages must go back and forth between the buyer and the seller without loss of time.

In the early days letters were carried by coach or by riders on horseback. There are now many ways of doing business quickly with people at a distance. The Post Office Department, which is managed by the national government, has our letters and papers carried on fast railroad trains or by airplane. From the post office they are delivered by automobile or wagon, or by a postman on foot.

By means of electricity messages may be sent rapidly along telegraph wires. This is especially helpful in doing business quickly between far-distant points, and is used more and more every day.

Not many years ago the telephone was invented. Then people could talk over a wire. Today no business men can get along without a telephone (Fig. 87).

The latest means of communication is by radiophone. As a means of sending out news items and information this instrument has proved so helpful that it is one of the greatest inventions known and is coming rapidly into use.

About the time the telephone first began to be used, the typewriter, a machine for writing letters rapidly and clearly, was invented. Until that time all letters were written by hand. The typewriter has made it possible for a business man to carry on a large business much more easily than when letters were written by hand.

SOME RELATED PROBLEMS

1. Why are freight trains usually slower than passenger trains?
2. Why are double-track railroads better than single-track roads?
3. What are express companies, and what work do they do?
4. What is the parcel post?
5. Why are there so many more railroads in some regions than in others?
6. Find out the names of the railroads near your home.

7. Why do railroads run through tunnels in some places?
8. Describe all that happened to a letter from a friend before it reached you. How long was it on the way?

SOME THINGS TO DO

1. Find a number of business envelopes that have passed through the mail, and compare the marks that you see on them. See if you can explain these marks.
2. Tell about the journey of any kind of freight that has come to your home.
3. Describe your journey as a passenger on any trip you may have made.
4. Make a list of the raw materials from which ten articles in your schoolroom are made.

DIRECTION, DISTANCE, AND MAPS

40. HOW TO TELL DIRECTIONS

SOME THINGS TO LEARN

1. The cardinal points of direction.
2. Names of directions halfway between the cardinal directions.
3. How to tell directions by the sun.
4. Time of day when the sun is directly south.
5. How one can tell directions by the stars.
6. What a compass is.
7. When a compass is especially valuable.
8. How weather vanes show directions.
9. How sailors tell directions.
10. How a hunter in the woods tells directions.

What is direction? When we wish to travel to a place not known to us we must first learn the way or *direction* to go, or we shall soon be lost. In the country, guideposts and signs are set up at crossroads on the leading highways, telling which way to go and how far it is to the towns and cities lying in different directions. These guideposts are the greatest help to travelers, and especially to strangers. If there are no guideposts, and one knows in a general way the direction in which he wishes to go, there are certain ways by which he can determine it exactly.



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FIG. 87. A telephone exchange. All telephone lines or wires lead to the telephone exchange. It is here that one may have his own line connected with the one reaching to the person with whom he wishes to talk. How does the operator make the connection? How do you address one with whom you wish to talk over the telephone?

How to find the directions. We usually find out direction by means of the sun. The sun rises in the eastern part of the sky and sets in the western part. If we face the sun at sunset, objects toward our right will be nearly *north*, and those toward our left, nearly *south*.

In this part of the world the sun rises to the *east* of us, is to the *south* of us most of the day, and sets to the *west* of us. Halfway between sunrise and sunset is noon. At this time the sun is south of us, and a shadow always points toward the north.

Using the North Star to find directions. The best way to find the north on a clear night is by the North Star. The North Star always stays in the same place in the sky, and the near-by stars seem to go around it every twenty-four hours. If you can locate the Great Bear or Big Dipper, then the North Star may be found easily. A line through the two stars which make the edge of the



FIG. 88. The Big Dipper and the North Star. The Big Dipper travels around the North Star every twenty-four hours. Where is the Big Dipper in the evening? Get up early in the morning and see if you can find it.

dipper opposite its handle always passes through the North Star. These two stars are called the Pointers (Fig. 88).

Sailors often find the direction they are going by noting the position of the North Star and other stars. Indians and many other people in different parts of the world use the stars in a similar way.

North, east, south, and west are called the *cardinal* (or principal) *points* of direction, because all other directions over the surface



FIG. 89. A compass card. The directions are marked near the outer edge of the compass dial. You should be able to name at least eight of these directions. Explain just how to use a compass.

of the earth are measured from these four cardinal points.

There are many directions between the cardinal points. Northeast is halfway between north and east; southeast, halfway between south and east; southwest, halfway between south and west; and northwest, halfway between north and west.

Finding the way by means of the compass.

One of the easiest ways to find direction is by means of a compass. A compass is an instrument often small enough to carry in the pocket. The compass has a magnetic needle hung in the center so that it swings easily. This needle always points toward the north when the compass is held level. The opposite end, of course, points south, and from these two points, east and west may easily be found. The compass needle does not always point exactly north and south, but it is the best means of finding direction in the forests or any strange region. Everyone who walks in the forest, or over a large plain, or who goes camping, should carry a compass, for often it is a great help at night and on dark, stormy days (Fig. 89).

Other ways of telling direction. Many church spires and tall buildings have wind or weather vanes with arms indicating the points of the compass.

Hunters and trappers have many ways of telling direction by noticing the trees and the rocks. In some places moss grows on the north sides of the trees. Boy Scouts learn many ways of telling direction when it is cloudy or dark.

41. HOW DISTANCE MAY BE SHOWN SOME THINGS TO LEARN

1. Different ways of measuring distance.
2. Why we do not always use the same unit to measure distance.
3. How to show different distances on a small paper.
4. Why we must use different scales to show distances.
5. How to choose a scale.

How we measure distance. Whenever we travel from one place to another, whether on business or for pleasure, the questions "What direction?" and "How far?" are always important. In an early day it was common among the Indians to measure the length of a journey by the number of days it would take on horseback. We measure *distance* from one place to another by saying it is so many feet or rods or miles.

In measuring short distances we use inches or feet, but distances such as the distance between cities are measured in miles.

Most people can walk three or four miles in an hour, but a soldier carrying a heavy pack can march only twelve or fifteen miles in a day. A fast horse can trot a mile in about two minutes, but a fast railway train can easily go a mile in one minute, while airplanes often travel more than two miles in one minute.

How to show distance by a drawing. If you were asked to tell anyone how to reach a certain place, it might be helpful to make a little drawing to show both directions and distances. For instance, a boy whose home is three blocks north and two blocks east of the school could show this by drawing two lines on paper. He could let one inch on the paper represent one block on the street. Then a line three inches long drawn toward the north, and a line two inches long drawn from this point toward the east, would show both how far and in which directions from the school one would have to go to reach his home (Fig. 90).

If the town or village nearest your home town is four miles north and six miles west, you could show this on paper by two lines, each drawn so that one inch on the paper would stand for two miles on the road. Such drawings are said to be made according to *scale*.

How to choose a scale. For showing long distances one cannot use the same scale

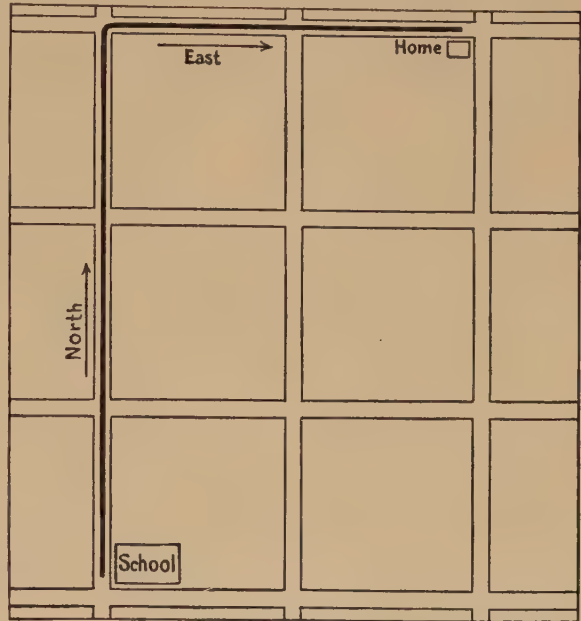


FIG. 90. Distance shown by a drawing. Scale of drawing one inch to one block. The arrows show the directions followed by a boy going home from school. Are there other routes he may follow? Describe them.

that he uses for short distances. If your friend lives ten miles away, you can show this distance on a small sheet of paper by letting one inch on the paper equal two miles on the road. But you could not use the scale, one inch equals two miles, if your friend lived fifty miles away, for the line on your paper would need to be twenty-five inches long. When the distance you wish to show is fifty miles you can easily do it on paper if you let one inch equal ten miles. Thus we see that the scale you choose depends on the distance you want to show and the size of the paper upon which you are to make your drawing.

SOME RELATED PROBLEMS

1. The distance between two cities is forty miles. If one inch equals eight miles, how long a line will be needed to show the whole distance?
2. If a line four inches long is drawn on a paper to show the distance between two places twenty-eight blocks apart, what is the scale that is used?

3. If your schoolroom is forty feet long, what would be a good scale to use in showing this length by a line on paper?
4. If you are facing halfway between south and west, what is the direction directly behind you?

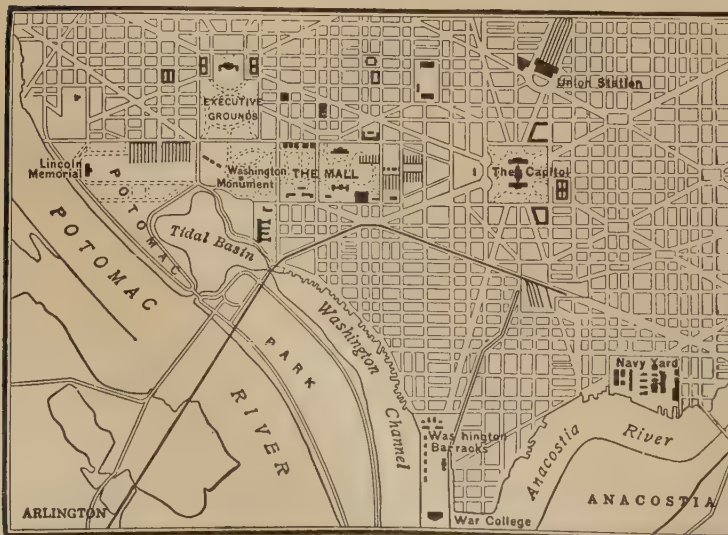
SOME THINGS TO DO

1. Find out from your parents or a friend the distance and direction to each of three near-by towns. Using the scale, one inch represents one mile, draw lines on the blackboard to show the distance and direction to each.
2. Using the scale, one inch represents four miles, draw lines on a sheet of paper to show the distance and direction to each of the towns.
3. If you live in a town, draw lines to a scale, showing the distance and direction from your school to the post office.
4. Look carefully at the position of stars of the Big Dipper and make a North Star poster using gilt or silver stars.

42. USING SMALL DRAWINGS TO SHOW LARGE AREAS

SOME THINGS TO LEARN

1. How to show a large area on a small surface.
2. How to draw a map.
3. How maps can help us learn about distant neighbors.



Keystone View Company

FIG. 91. An airplane view in Washington, our capital city. At the upper left corner is the Capitol building, at the bottom the Library of Congress, and at the right margin the Senate Office Building. Cutting off the lower left corner is an east-west street. What is the direction of the street crossing this? In what direction is the Library of Congress from the Capitol?

4. Why scales are used in drawing maps.
5. The meaning of large and small scales.
6. How map scales are shown.
7. What a relief map is.
8. How the lay of the land is shown on a physical map.
9. What other things are shown on a map.

Why we need maps. We can easily make a drawing to include a number of places if we only know the direction they are from one another and how far apart they are. The finished drawing would show the places

FIG. 92. A small-scale map of a part of Washington, our capital city.

The scale used in this map is about one inch to one mile.

See if you can find the Capitol, the Library of Congress, and the Senate Office building.

In what direction and how far is the Capitol from the War College building?

About how far is the Lincoln Memorial from the Capitol? the Washington Monument?

Can you find the location of the White House in the executive grounds?

FIG. 93. A map of a small section of Washington, our capital city.

This map represents practically the same section of the city as that shown in the airplane view, in Figure 91.

The scale is about one inch to one-fourth of a mile.

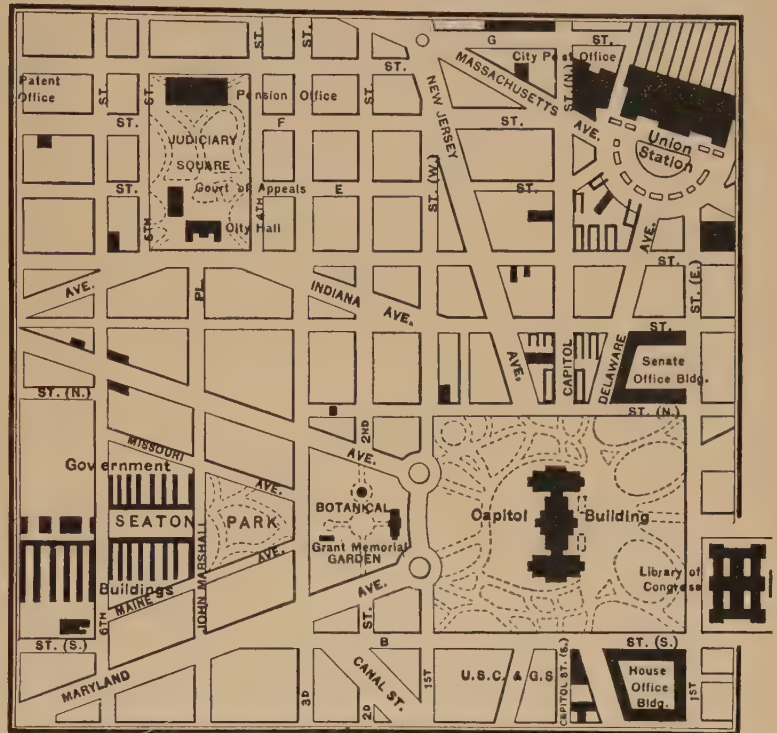
What is the area of the Capitol grounds?

How far is the Union Station from the Capitol?

In what direction does New Jersey Avenue run? Maryland Avenue?

In what direction is the Grant Memorial from the City Hall? from the Library of Congress?

Find out for what the Patent Office building is used.



as they would appear when seen from an airplane or a balloon (Fig. 91). A drawing or plan of this kind is called a *map* (Fig. 92). We may show a small or a large region on a map (Fig. 93). We can make a map of our schoolroom, of a room at home, of the yard, the farm, the town, the state, or of some larger area (Figs. 90, 92, and 93).

Maps help us to study the directions and distances, or, as we say, the position of many different things at the same time. They are, therefore, of much use in learning about distant peoples and places.

Kinds of maps. The *relief* map is so drawn that the shading shows which parts of the land are flat, which are rolling, and which are mountainous. Different colors are used on the *physical* map to show the heights of the land and the depths of the bodies of water. From the physical map one may learn the names of the important surface features, and if one understands what the colors mean he can tell at once the location of the high-

lands and the lowlands. He can find the names and directions of many rivers, the great lakes, and many other things (Fig. 114).

But we are also interested in where people are and what they are doing. Hence the maps used in this book must show certain facts about the living things on the earth. *Political* maps are useful in showing how people have divided the world into countries and states (Figs. 97, 119, and 133). Political maps may also show cities, railroads, and canals. In addition, maps may be used to show rainfall (Fig. 115), winds, vegetation, the places where important crops are grown, where useful minerals are found, and where industries are located (Figs. 138, 150, 159, and 175). We cannot learn much about a place unless we know where it is, its distance from other places, and many other facts that a map can show.

Nearly every day the children and their teacher wish to study a map together. This is made easy by the use of large wall maps, which may be hung on the schoolroom wall.

In this book the maps are usually drawn so that the south or bottom part of the map is next to you. The north or top of the map is at the opposite side, east is at the right side of the map, and west is at the left side.

North and south directions are shown by black lines which usually run nearly straight up and down on the map. East and west are shown by black lines which usually run nearly straight across the map. These lines make it easy to find out exact directions on the map (Fig. 94).

Why maps are drawn to scale. There are a large number of maps in this book. Some of them cover two pages (Fig. 97), some cover a whole page (Fig. 137), and some cover only a part of a page (Fig. 111). Some represent large areas of land and some small areas. If the map pictures a large area of land we cannot represent as many small features of the landscape in it as we can when only a small area is pictured. It is possible to picture areas of different size by using different scales.

It is necessary, therefore, that every map should have its scale shown in some way. This is usually done by drawing a line on the margin of the map and showing how many miles on the earth's surface it represents. For example, the scale for the map of the United States (Fig. 130) is shown to be two hundred and eighty-four miles to one inch. This means that one inch on this map equals two hundred and eighty-four miles on land.

43. HOW TO READ MAPS

SOME THINGS TO LEARN

1. Why different colors are used on maps.
2. How one may find out the meaning of the colors used on a map.
3. Why signs and symbols are used on maps.
4. The direction that each side of a map is from the center.
5. Why we need wall maps.

6. How to determine the directions on a map that is hung on a wall.

What the colors mean. Many different things may be shown on a map by means of colors. On the physical maps in this book green means lowlands, and brown means highlands (Fig. 114). The different shades of blue show the varying depths of oceans, lakes, and seas (Fig. 114). The countries and states of the world are usually shown by different colors (Fig. 97). Sometimes black and white can be used to represent the areas where larger or smaller quantities of certain crops grow, or where different kinds and quantities of various minerals are found. By means of different marks and symbols it is possible to show on one map the distribution of many things (Fig. 159).

Usually in the margin of such a map a key, or explanation, is given which tells just what each symbols or mark means (Fig. 159).

How signs and symbols are used. On large-scale maps of small areas each building may be drawn to scale (Fig. 93) so that one could learn the size of the building by studying the map. But on maps representing somewhat larger areas it is impossible to do this. So on such maps a schoolhouse may be shown by a triangle, Δ , a church by a cross, $\times$, a railroad by a narrow line, ———, and boundaries between countries and states by a broken line of dots and dashes, On very small-scale maps only the largest features can be shown. Your schoolhouse could not be shown on the map of the United States (Fig. 133).

On a map, a river is usually shown by a winding black or blue line, ~~~~~, and a city or town by a dot, ., a dot with a circle around it, $\odot$, or a star, $\star$. As we continue our study of geography we shall learn how to use and read many other map symbols.

When a map is hung on the wall, the northern part is toward the top and the southern at the bottom (Fig. 94). This does

not mean, however, that places at the north of the map are higher than those at the south. It merely means that we have hung the map in a certain way so as to read it easily.

The map is a plan, and in order to show things exactly as they are on the earth it must be placed in the same position as things on the earth, that is, flat on the table and with the north of the map toward the north cardinal point.

SOME RELATED PROBLEMS

1. Study a large wall map and find out why the names of all the cities are not printed in letters of the same size.
2. On a road map showing your town or city find out how many different things are shown.
3. Why are different symbols often used on the same map to show towns and cities?

4. Make a list of five symbols you would use to show different features in a map of your school district.

SOME THINGS TO DO

1. Measure the height and length of the longest wall of your schoolroom, and draw a map to scale, showing in their proper places all the blackboards, pictures, flags, and maps on this wall.
2. Make a drawing of the first floor of your home, showing the rooms, doors, windows, and the largest pieces of furniture.
3. If you live on a farm, make a plan of the farm, using as large a scale as possible. Mark off the fields and fences. Show the yards and the farm buildings in their proper places.
4. Make a plan of the school grounds, showing all important features in it. A good way to show trees is by small circles.



FIG. 94. A picture of a wall map of the United States. Can you trace the large rivers on this map? the boundary lines between the states? the shore line of the large lakes? the coast line of the United States?



U. S. Army Air Service



Courtesy of Union Pacific System

FIG. 95. Two views in the Hood River Valley, Oregon. In the fertile orchards of this valley some of the finest fruit in the world is raised. Perhaps you have eaten some of the delicious apples grown here. At the upper end of Hood River Valley stands Mt. Hood with its snow-capped summit. See if you can locate Mt. Hood on the map on pages 162-163.

PART II

WORLD RELATIONS

HOW THE EARTH'S SURFACE IS DIVIDED

44. WHAT THE WORLD IS

SOME THINGS TO LEARN

1. What the earth is and of what it is made.
2. How large the earth is.
3. Names of points farthest north and farthest south on the earth.
4. What the Equator is.
5. How to tell direction on a globe.
6. Why globes are made in different sizes.

Why we are interested in other people. You have read or heard of peoples living in many different countries in the world. We are all interested in far-away people—in what they are doing, in the ways in which they live, and in what they do for us. We should like to know more about them and their home countries. Are they like the people we know? What do they do for a living? What do they eat and wear? Would we feel at home if we visited them?

What the world really is. The world is really a great ball or globe, made up of rock, soil, water, and air. It is called the *earth*. Large parts of the world are covered by water; we can travel on water for days without seeing any land. Yet the land surface of the earth is so great that more than 1,700,000,000 people live on it, and there is still room for many millions more. If one were to travel all his life he would not be able to visit all parts of the earth.

How we can represent the earth. Since we know the earth to be round like a ball, let us take a large orange to represent it. Let north be the stem end and south the blossom end. Then, no matter where we start, the farthest point north on the orange

is the stem. On the earth the most northern point is called the *North Pole*. In the same way we find that the farthest point south on the orange is the blossom end. On the earth this farthest point south is called the *South Pole*. The South Pole is exactly half-way around the earth from the North Pole.

How to tell directions on a globe. On a globe, directions are shown by lines (Fig. 96).



FIG. 96. A picture of a globe. On the globe cover in this picture you can see the north-south lines running from pole to pole, and also the Equator.

Those extending from pole to pole are north-south lines. Halfway between the poles a line is drawn around the globe to show the places that are halfway from one pole to the other. This line is called the *Equator*, and the places on the earth the same distance from each pole are on the Equator. The Equator is an east-west line, and any line running in the same direction as the Equator is an east-west line.

Globes, like maps, can be made in different sizes. Small globes, drawn on a small scale, cannot show many things. Large globes, therefore, are better because much more can be shown. No globe is big enough to show all we want to know about a country, but globes are better than maps for showing the earth as a whole. For many purposes larger-scale maps are more useful than globes.

45. THE PARTS OF THE EARTH'S SURFACE

SOME THINGS TO LEARN

1. The names of the continents.
2. How much of the earth is land and how much water.
3. The names of the largest oceans.
4. The size of the oceans.

The large land and water areas. A globe is colored to show the land and water areas of the earth. The largest land regions are called *continents*. Water covers more than seven-tenths of the earth's surface. This great mass of water is divided into several parts called *oceans*. There are seven continents and five oceans (Fig. 97).

The best-known continents and oceans. The continent on which we live is *North America*. West of North America is the *Pacific Ocean*, and east of it the *Atlantic Ocean*.

If the people of the United States cross either of these oceans they come to *Eurasia*, which is usually spoken of as two continents, *Europe* and *Asia*. If they cross the Pacific

Ocean they reach Asia; if they cross the Atlantic Ocean, they reach Europe.

The other continents are *South America*, which is southeast of North America; *Africa*, south of Europe; and *Australia*, southeast of Asia. In the Pacific Ocean are many islands, some of which are far from any continent (Fig. 97).

Should we travel from South America to Africa we would cross the Atlantic Ocean just as we did in crossing from North America to Europe. In the same way the Pacific is west of South America and east of Australia. Between Australia and Africa is another ocean known as the *Indian Ocean*.

These three oceans are the most important ones in the world, because they lie east and west of great continents and border the inhabited regions of the world.

The cold continent and oceans. Around the South Pole there is a continent called *Antarctica*. It is larger than Europe or Australia and smaller than South America. South of the Atlantic, Pacific, and Indian oceans, and surrounding Antarctica, is the *Antarctic Ocean*. Both the continent and the ocean are little known, because they are in such a cold part of the world.

North of the Atlantic Ocean and connected with it by many narrow stretches of water is the *Arctic Ocean*. It lies around the North Pole and is very cold. The Arctic Ocean is not a large body of water.

Size of the oceans. This brief study of the globe and the map (Fig. 97) shows that, in most cases, we must cross an ocean if we wish to travel from one continent to another or to exchange products with our distant neighbors. A voyage by steamer across the Atlantic from North America to Europe usually takes eight or nine days. The fastest boats can make the trip in about five days.

The Pacific is twice as broad as the Atlantic, and a voyage across the Pacific from North America to Asia takes more than two weeks.

46. SOME THINGS SHOWN BY THE WORLD MAP

Problems:

1. The Equator on the world map is an east-west line. The other straight black lines running in the same direction as the Equator are called *parallels* and show distances from the Equator. (a) How many parallels are shown on the map in the Northern and in the Southern Hemisphere? (b) What cities in Europe and Asia are nearly east of New York? (c) What city in South America is the same distance from the Equator as Los Angeles? (d) What large city in Europe is east of the mouth of the St. Lawrence River?
2. The curved lines that extend from the North Pole to the South Pole on the map are *meridians*. Meridians are everywhere north-south lines and always indicate distances east and west about the earth. (a) How many meridians are shown for the earth as a whole? (b) How far would one travel from London west to the meridian passing through New Orleans? (c) What is the direction of central Australia from Japan? the mouth of the Amazon River from the mouth of the St. Lawrence?
3. Places at equal distances from the Equator receive about the same amount of heat from the sun. (a) Find a place on the west coast of Europe that should be just about as warm as Los Angeles on the west coast of the United States; (b) a city on the west coast of South America; (c) one on the west coast of Africa; (d) one on the west coast of Australia. (e) Why would you expect Havana in Cuba to be just about as warm as Rio de Janeiro in Brazil?
4. How do some of the continents and islands of the world compare with each other in size? (a) According to the world map, which appears to be the larger, Africa or South America? (b) Greenland or South America? (c) Alaska or Australia? (d) Canada or the United States?
- (e) Study the Appendix of your text (page 321) to find out the actual size of each of the different areas you have been comparing.
5. What do the different colors on the map of the world represent? (a) What color is used to show coast lines and rivers? (b) How is the boundary between the United States and Canada shown? (c) In what color are all the names printed? (d) Why are Alaska, Porto Rico, and the Philippines shown in the same color as the United States?
6. The tropics are equally distant from the Equator. (a) What countries in the Southern Hemisphere are crossed by the *Tropic of Capricorn*? in the Northern Hemisphere by the *Tropic of Cancer*? (b) What countries in the Southern Hemisphere are as far from the Equator as is the southern part of the United States?
7. Why is the South Pole shown in four places on the world map and in only one place on the globe?

Questions:

1. Through what countries would you pass in going south from Pittsburgh, U. S.
2. What continents are in the Western Hemisphere? Which ones are in the Eastern Hemisphere?
3. What continents are crossed by the Equator?
4. What two continents are wholly south of the Equator? What two are wholly north of the Equator?
5. What continents border on the Pacific Ocean? What ones touch the Atlantic Ocean? What continents border on the Indian Ocean? Which touch the Arctic Ocean?

Essential names and places:

Be able to name and locate the following on an outline map of the world: each of the continents; each of the oceans; these islands: Cuba, Madagascar, Ceylon, New Zealand, Tasmania, Borneo, Papua (New Guinea), Java, Philippines; the following rivers: Amazon, Nile, La Plata, Ganges, Hwang; these capes: Good Hope, Horn.



FIG. 97. A Political Map of the World.



FIG. 98. A view of the Panama Canal. This picture is taken from Miraflores Locks. In the distance, across Miraflores Lake may be seen Pedro Miguel Locks. What is a lock? What continents are separated by the Panama Canal?

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p of the World.

Courtesy of University of Chicago Press



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FIG. 99. A view of the Suez Canal. This shows the passing of a steamship through the canal as seen from the desert. The Suez Canal cuts across the narrow neck of land which joins Africa and Asia. Can you find this neck of land on the map?

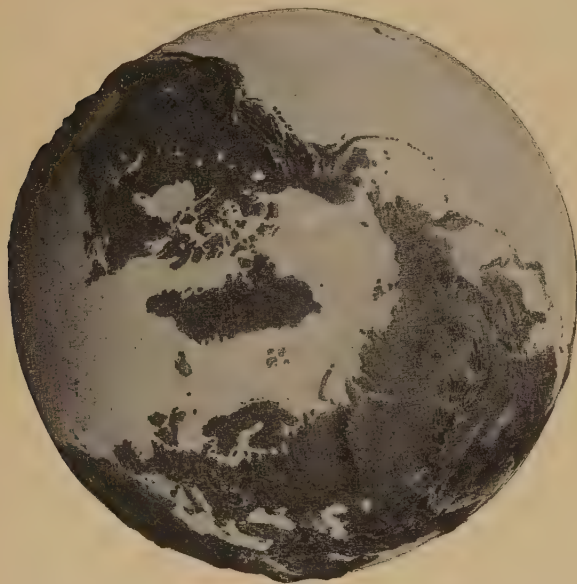


FIG. 100. The Northern Hemisphere. The North Pole is in the center of the Northern Hemisphere. What line is on the southern edge of this hemisphere? What continents are wholly or partly in the Northern Hemisphere? what oceans? Notice the mountain ranges in this hemisphere. Can you tell which way they extend?



FIG. 102. The Eastern Hemisphere. The Equator passes in an east-west direction through the middle of the Eastern Hemisphere. What point is farthest north and what one farthest south? What continents are wholly or partly in this hemisphere? what oceans? Can you tell which way the longest mountain ranges extend?

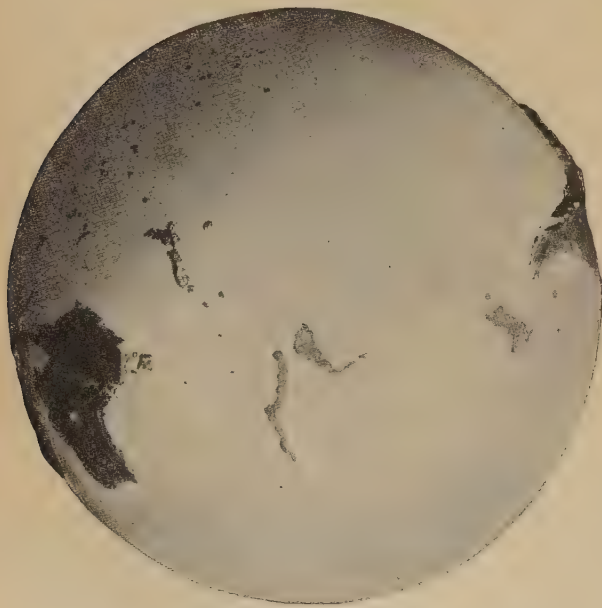


FIG. 101. The Southern Hemisphere. The South Pole is in the center of the Southern Hemisphere. What line is on the northern edge of this hemisphere? What continents are wholly or partly in the Southern Hemisphere? what oceans? Notice the great mountain range at the top of this picture.



FIG. 103. The Western Hemisphere. The Equator passes in an east-west direction through the middle of the Western Hemisphere. What point is farthest north? farthest south? What continents are wholly or partly in this hemisphere? what oceans? Trace the long mountain range which runs through both of these continents.

47. THE HEMISPHERES

SOME THINGS TO LEARN

1. The meaning of "hemisphere."
2. The hemispheres most often mentioned.

Dividing the earth into hemispheres. The Equator divides the round earth into half spheres or *hemispheres*. If we study the location of the continents on the globe, we can see that the *Northern Hemisphere* contains the larger part of the land area of the world (Fig. 100). We can see also that the greater part of the water of the world is south of the Equator, or in the *Southern Hemisphere* (Fig. 101).

The earth may also be divided into the *Eastern Hemisphere* (Fig. 102), containing Eurasia, Africa, and Australia, and the *Western Hemisphere* (Fig. 103), containing the Americas.

SOME RELATED PROBLEMS

1. What is the longest journey you have ever made? How far was it, and how long did it take you?
2. From some point in the Northern Hemisphere trace on the globe two voyages around the world in different directions. Which is the shorter? Why?
3. If you were to travel around the earth along the Equator, what oceans and continents would you cross?

SOME THINGS TO DO

1. Turn a globe in such a way as to put Europe directly under your eye. What continents can you see? what ocean?
2. Turn a globe so that you look down on New Zealand. What continents and what oceans can you see?
3. From a place halfway between the Equator and the North Pole move your finger around the globe in the same direction in which the Equator runs. What oceans and continents do you cross?
4. See if you can find the distance through the earth and the distance around the earth at the Equator.

HOW MEN MAKE USE OF THE OCEAN

48. WHERE THE OCEAN MEETS THE LAND

SOME THINGS TO LEARN

1. What the coast line is.
2. What bays, harbors, and seaports are.
3. What a cape is.
4. The need for lighthouses, lightships, buoys, and pilots; for life-saving stations, life-boats, and tugboats.
5. How wharves are used.
6. How the submarine telegraph or cable, the radio-telegraph, and the radio-telephone are used.

The coast line. The part of the ocean of most interest to us is the *shore line*, because here the land and water meet. A traveler can go over the ocean only in a vessel. Somewhere on the coast or shore line there must be places where vessels can land easily and safely. If the shore is straight and exposed to the winds and waves, it is usually unsafe or even dangerous for vessels to come near the land. If the coast is crooked, it has here and there small areas of water which extend into the land, forming *bays*.

What a harbor is. In a bay with land nearly all around it the winds and the waves are not so strong as they are out on the open water. Hence bays usually make good landing places or *harbors*, because they are protected from winds and waves (Fig. 104).

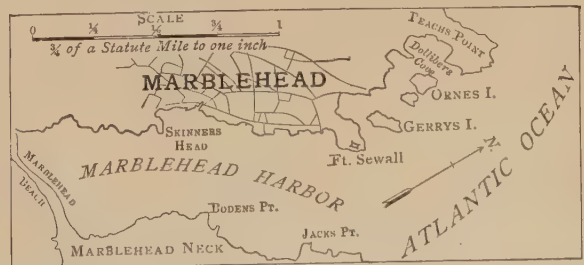


FIG. 104. A map of Marblehead Harbor. This harbor is a bay which opens into the Atlantic Ocean. How is the harbor protected from winds and ocean waves? How far is it from Jacks Point to Fort Sewall? What direction is Bodens Point from Fort Sewall? Notice that the direction of north is shown by the large arrow.



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A good harbor is an excellent place, as a rule, for the location of a city. Such a city is called a *seaport*. One of the largest cities in the world is New York City. It is a seaport and has a magnificent harbor in New York Bay (Fig. 105).

Many of the best-known cities in the world are seaports. In every great seaport vessels loaded with goods and products for trade are coming and going all the time.

Once out of the harbor, a vessel may sail to any other port in the world. The ocean is a great highway over which vessels move freely and easily. Just as a land road must be made safe for travel, so also the ocean highway must be made as safe as possible. The captain of a ship must know where the good harbors are. He must know places along the coast that are especially dangerous.

The need for lighthouses. Points of the coast line extending far out into the water are called *capes*, and they are often marked by lighthouses, so that vessels may not sail too close to them (Fig. 106). A lighthouse shows a light every night from sunset to sunrise. When it is foggy, so that the light cannot be seen, a foghorn blows a warning.

Some lights shine steadily; others flash every few seconds; and still others flash first

red and then white. The seamen know each light by the way it shines, and thus can be sure what part of the coast is near (Fig. 107).

In dangerous places nearer the shore, where a light is needed but where lighthouses cannot be built, lightships are anchored.

The entrance to many harbors is just a narrow channel of deep water bordered by sandbars or rocks. In order that ships may be kept in the safe, narrow channel, buoys are placed along the sides of it. A buoy usually has a light, a bell, or a whistle.



Brown Bros.

Fig. 106. A lighthouse. The tall, round tower is the lighthouse. What do you see that makes you think this is a dangerous coast? Why is there a radio station here? What use may be made of the several buildings? Note how level the ocean was when the picture was taken.

FIG. 105. A part of New York Harbor.

This picture was taken in Brooklyn looking across to New York.

Note the wharves on both sides of the stream.

One of the boats to the right is a large ferry boat that carries passengers and vehicles between New York and Brooklyn.

The other boat is loaded with freight cars.

In the center is a tug boat. Do you know for what a tug boat is used?



FIG. 107. Lighthouses and the distances they may be seen. How far is it from Boston to Portland? How many lighthouses are shown on this coast? The Cape Ann light may be seen for more than twenty miles from all directions. How is this shown on the map? How far may the Boon Island light be seen? Notice that a vessel sailing near shore can always be in sight of two or more lights on a clear night.

The work of life-saving stations. Some of our coasts are so dangerous that vessels are sometimes wrecked in spite of the danger signals along the shore. About every four miles along such coasts the government has placed life-saving stations. From these stations men are constantly watching for vessels that may be in danger or distress. When ships are disabled or wrecked, these brave men go out in their trusty lifeboats

to save those on board. Since our trade with other countries helps all the people of our country, the national government provides many means for making ocean travel safe.

The need for pilots, wharves, and docks.

In every harbor wharves or platforms are built out into deep water far enough so that large vessels can easily come up beside them to load or unload. Oftentimes a wharf is long enough so that several boats can be tied up at the same time. Large seaports have many wharves and docks (Fig. 105).

It is not possible for a ship's pilot to know all about the channel leading into each harbor that his ship may enter. For this reason every seaport has special pilots who know all about the channel and can guide vessels safely into and out of the harbor.

Every harbor also has many powerful little steamboats called tugs, or tugboats. These boats are busy all the time helping large ships and sailing vessels as they come into and pass out of the harbor (Fig. 105).

Communicating over the ocean. We have already learned how much the mail, the telephone, and the telegraph help business and commerce on land. The mail is also carried across the oceans between the people of different continents.

Messages are sent from one continent to another by telegraph also. The wires which carry the messages are bound together and covered with waterproof material that protects them from decay and also from the sea water. These wires lie on the bottom of the ocean and are known as cables. The cable or submarine telegraph has been in use between Europe and North America since 1866. Now all the continents are connected by cable.

All over the world messages are now being sent long distances without wires (Fig. 108). The radio-telegraph, or wireless, is used every day, just as cables are. By this means



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FIG. 108. A wireless station. Phonograph and other music is frequently sent out by wireless. What have you ever heard over the radio? From what stations were the programs sent? How far away were they? Is wireless useful only for entertaining people?

vessels out at sea can communicate with one another and also with the shore. This is especially valuable when a vessel is in danger or distress and needs help. The method of sending messages without wires was perfected by Marconi, an Italian scientist.

The radio-telephone, which makes it possible to talk without wires between places hundreds of miles apart, is now much used.

SOME RELATED PROBLEMS

1. Find out the name of the largest passenger vessel, and how many people it can carry.
2. How are sailors warned of danger in foggy weather?
3. Why is it almost impossible for a lifeboat to sink?
4. Why is the radio-telegraph more necessary on the sea than on the land?
5. Find out who invented the submarine cable.

SOME THINGS TO DO

1. Study the shore line of a small pond or puddle of water after a rain. Imagine this to be a bit of coast line, and show where you would expect cities to be.
2. Make a drawing of this coast line and put two lighthouses and some buoys where you think they might be most needed.
3. Try to find out what a breakwater is, and its use.

USEFUL PRODUCTS THAT COME FROM OTHER CONTINENTS

49. WHY PEOPLE EXCHANGE PRODUCTS

SOME THINGS TO LEARN

1. What people need in order to live.
2. Some things people like to have but do not need.
3. Why people exchange products.
4. Why countries differ in their products.

What people want. We have already learned that people everywhere must have food, clothing, and shelter. They also need fuel for heat or cooking, and some tools with which to work. In order to be comfortable and happy everyone wants more than just the things that make it possible to keep alive.

We have also learned that no person can do everything for himself. People help each other in living. Scarcely a country can produce everything the people in that country need and want. One country helps another by producing more than it needs of some things and by trading with other countries for other things it must have. So the world is really like a great neighborhood. It will be interesting, therefore, to know more about our world neighbors, what they are doing, how they live, and why their countries and their ways are not like ours.

Why countries differ in their products. One important reason why countries are not all alike, and why there are different crops in different parts of the same country, is because of differences in climate. Some regions of the world are cold, some are hot, and some are mild, or temperate. Some places are very dry, others are very wet, and some have a moderate rainfall. The things produced in cold regions are different from those found in hot or temperate regions, and the people in cold regions and those who live where it is warm all the time need different food and clothing. In most parts of our

own country winter is so different from summer that ways of living must change with the seasons. We must wear different clothes, eat different foods, do different kinds of work, and in many ways live differently.

50. WHAT DIFFERENT CONTINENTS PRODUCE

SOME THINGS TO LEARN

1. Why North America produces so many different crops.
2. Why people produce more of some things than they need for their own use.
3. Why people in North America differ so much in their ways of making a living.
4. Some things hot countries produce.
5. What we have that the people of South America need.
6. What we can learn about countries from their products.
7. What we send to Eurasia and what we get in return.
8. Why Australia has products similar to those of our own country.
9. What the hot parts of Africa and South America send us.
10. Why we do not trade much with South Africa.
11. How commerce makes all the people of the world neighbors.

What North America produces for the world. Because North America has so much good land where crops can be grown, we raise all the corn, cotton, and wheat needed at home and enough more so that we can sell great quantities to our neighbors in other parts of the world.

But the people in the colder northland of our continent cannot produce crops. They can, however, hunt wild animals, such as the fox, polar bear, and seal, and sell the furs to people of warmer countries in exchange for food, clothing, tools, ammunition, and guns.

Some of our Mexican and Central American neighbors, who live in the southern part of North America, have warm weather all

the year round. Little shelter is needed, clothing is light and loose, and food is not hard to get. The people raise more coffee, cacao, and bananas than they need. So we buy from them these products we cannot raise, and sell to them goods that we can manufacture in our many busy factories.

Our southern neighbors have no winter; our northern neighbors have only a short summer. They cannot, therefore, live as we live, nor use the kinds of food we use. But they help us because they furnish us with the things we cannot raise for ourselves. We help them by selling them certain kinds of food, tools, clothing, and other products of our factories and fields.

How South America helps. South America also helps us. From the northern part of South America we get some hot-country products like those of Central America. This is also one of the sections from which we get rubber. Rubber is made from the juice of a tree that grows only in hot, moist regions (Fig. 109). But South America produces another hot-country crop that is much prized in our country. That is coffee, without which, to many people, no breakfast seems complete.

The people in these warm countries live outdoors a great deal of the time, and they wear very few clothes. The weather there is always as warm as a hot summer day in our country.

The people of southern South America send us wool and skins from sheep, and hides and other products from cattle. This region is a great grazing country like parts of the United States. The climate therefore must be much the same. These people raise also great quantities of wheat, just as we do. Other countries buy their wheat, and they buy goods from us and from other parts of the world. The extreme southern part of South America has no valuable products that we need. In this cold, wet country,



Courtesy of the University of Pennsylvania

FIG. 109. Tapping a rubber tree to get the juice or latex. This picture was taken in South America. Note the slashes the man has made and how they are arranged so that the juice runs down into a bucket. Only a small part of the rubber we use comes from South America. Fig. 335 shows the rubber industry in another part of the world.

which is not so cold as the northern part of our country, the Indians dress in skins.

Nearly all parts of North and South America are known to us through their products, which we see, and perhaps use, every day. Both the cold and the very warm parts of these two continents have products which cannot be grown in the United States, with its mild climate. In this way the people of the two American continents help each other and depend on each other.

What Europe and Asia furnish us. Europe is the most interesting and important continent to us. The early settlers in our own country came from Europe, and for many years great numbers of people from all parts of Europe have come here to make homes. It is natural, therefore, that we should carry

on much trade with Europe. The people of Europe need our surplus food, cotton, and machinery. We need and get many products from both Europe and Asia.

The coldest part of the world is in northern Eurasia, and from this region, with its few people, we get furs, as we do from the cold parts of our own continent. Southern Europe sends us olives, olive oil, and other products of a warm, dry climate. Most of western Europe has a climate much like that of portions of our country. The people there raise the same crops we do, but as they do not raise enough for home use they have to buy some food from us. In exchange for food we buy manufactured goods, such as cutlery, silk, linen, and cotton embroideries, in the making of which they are expert.

About half the people of the world live in southeastern Asia, a region noted for its rice, spices, and tea. These people furnish us with all the tea we drink and about all our spices, such as pepper, nutmegs, and ginger. Much of this area is as warm as it is in Central and South America.

What Australia supplies. Australia is the smallest continent, although it is as large as the United States. It is southeast of Asia, between the Indian and the Pacific oceans. Australia produces great quantities of wheat and wool, and in this respect is like our own country. The language and customs of the people are the same as ours.

Most of the products of Australia are sent to Europe, and in return the people receive manufactured goods, such as cloth, machinery, and farm implements. We also send them some machinery, tobacco, lumber, and petroleum.

The part that Africa plays. Central Africa is largely occupied by wild tribes of African blacks. Most of the ivory we use comes from this part of the world. Ivory is used for knife handles, paper cutters, piano keys, and many kinds of valuable ornaments. The

chief supply of ivory comes from the tusks of wild elephants which are found only in the hot parts of Africa (Fig. 110).

Central Africa has a heavy rainfall and is one of the warmest regions in the world. This is shown by the trees, the houses, and the dress of the people. It is also shown by the great variety of insects and the brilliantly colored birds, and by the kinds of animals, many of which have no hair or fur to keep them warm.

Southern Africa has a mild climate very nearly like that of our own country, and the products are like those of the United States. For this reason we do not trade much with the people of southern Africa. Gold and diamonds are the best-known products of this region.

What do the people of Africa get in return for the products they send to the rest of the world? From the United States they get clothing, machinery, and hardware, but most of their trade is with Europe.

How the people of the world are united. Thus we see that every day we are using products that have come from all the continents and from many countries.

This means that a great deal of commerce must be carried on over the oceans all the time. Steamers loaded with goods are daily coming in or going out of all the great seaports. They help make the people of all the continents neighbors.

SOME RELATED PROBLEMS

1. Why is so little known about Antarctica and the Antarctic Ocean?
2. What clothes would one need for a trip from the extreme south to the extreme north of North America?
3. Why do people in warm countries like to wear light-colored clothing?
4. To which of the stores in your town would you go to get some European product? some product from South America? What might you get in each case?



Brown Bros.

FIG. 110. Ivory on the way to market. The black men of Africa furnish the world much of its ivory. How is the ivory secured? What are some of the useful articles made from ivory? Why do the men wear so few clothes? How long do you think the largest piece of ivory is?

SOME THINGS TO DO

1. From a globe find out what parts of Europe are east of the United States.
2. Make a list of the different kinds of skins that are used for making coats.
3. Make a poster for a grocery window urging the use of hot-climate fruits.
4. Make a poster showing some wearing apparel from a northern country. Get pictures from catalogs. (This may be individual or group work.)

THE IMPORTANCE OF THE EARTH'S MOVEMENTS

51. HOW DAY AND NIGHT COME TO US

SOME THINGS TO LEARN

1. How the earth gets light and heat.
2. What twilight means.
3. Why any part of the earth's surface is first lighted and then dark.
4. The cause of day and night.
5. How long it takes the earth to turn around on its axis.
6. What the earth's axis is.
7. Why you like day and why you like night.

How the earth is heated. We know that days are always warmer than nights and

summers warmer than winters. Warmth is due to heat, and the heat comes from the sun. We can prove this to ourselves any day when the sun is shining.

Why is it, then, that at one time the sun warms us more than at others? Why is it that some regions are always hot and others hot only part of the time? There must be some reason why the sun's heat does not warm the earth equally.

Perhaps we can understand this best by finding out first why the days are warmer than the nights. Then we can see why some parts of the earth are hotter than others.

When we have daylight. If one holds a schoolroom globe in the sunlight, the half toward the sun is both lighted and heated. The other half is shaded from the sun and is dark. We may think of the lighted part as having day, and the half in the shadow as having night. Around the globe between the lighted part and the shadowed part is a belt which is partly dark. We may say that this region has twilight, or part light.

We have learned that the earth is a great globe like the school globe, but very much larger. It gets its light and heat from the sun, and about half of its surface is lighted at any one time. In the daytime we are in the sunlight, at nighttime we are in the shadow, and just before sunrise and just after sunset we have twilight.

If we hold the globe still, the same part of it is lighted all the time. But if we turn the globe slowly around, all parts of it will be in light, then in shadow, and then in the light again.

How we get sunrise and sunset; rotation. The earth is turning slowly all the time and thus we have daylight, twilight, and night regularly every day, for the earth turns entirely around once every twenty-four hours.

The earth always turns or *rotates* on an imaginary line passing through the center

of it and connecting the North and South poles, just as the schoolroom globe turns on a small rod. This imaginary line through the center of the earth is called its *axis*.

52. WHY WE HAVE SUMMER AND WINTER

SOME THINGS TO LEARN

1. How long it takes the earth to move around the sun.
2. Why summer weather is warmer than winter weather.
3. When we get spring and autumn.
4. About the seasons near the Equator.
5. Why there are no summer and winter seasons near the Equator.

What a year means. We have learned that it takes the earth twenty-four hours to make one complete turn on its axis. The earth has another motion which it completes in a year's time. Everyone has seen a top spin and at the same time move about in a circle on the floor. In much the same way the earth spins on its axis once a day and moves or *revolves* around the sun once a year.

If a child is eight years old, he has made eight trips with the earth around the sun. Each person measures how old he is by the number of times the earth has gone around the sun since he was born.

The earth turns on its axis three hundred and sixty-five times while it is making one trip around the sun. Therefore we say there are three hundred and sixty-five days in one year.

The earth's yearly journey. As a top circles over the floor we may notice that its axis sometimes leans over in such a way that it looks as if it might fall. As the earth rotates, its axis is always in a leaning position and it always points in the same direction, that is, toward the North Star.

During half of the year's journey the earth is on one side of the sun with the North

Pole turned away from the sun. This is our winter. During the other half of the year's journey the North Pole is turned toward the sun. This is our summer.

When the noonday sun is high. In summer the sun is high in the sky at noon and one has to look up to see it. Then the sun's rays strike the earth almost directly and give much heat. These direct rays from the sun help to give the warm weather that is so necessary for the production of good crops. Not only is the noonday sun high in summer, but the sun rises very early and does not set until late. Thus the summers are warm for two reasons—the sun is high in the sky and the days are much longer than the nights.

When the noonday sun is low. In winter the weather is cold. At this time of the year the noonday sun is low in the southern sky. The sun's rays do not strike the earth as directly as they do in summer, and therefore do not give so much heat.

Then, too, in winter the sun rises late and sets early. Thus we have two reasons for the cold winter weather—the sun is low in the southern sky and the nights are much longer than the days.

Other seasons of the year. Twice a year the sun is directly overhead at the Equator, and on these two dates, in March and September, the sun shines over all of the earth, that is, from pole to pole. Each day, as spring advances, the sun rises higher and higher at noon, and each day as autumn advances and winter comes on, the noonday sun sinks lower and lower. In the spring, as the ground warms up, the trees get new leaves, the birds and insects appear again, the farmers plant their seed, and all nature seems to take on new life. In the autumn the trees lose their foliage, the squirrels store food for the winter, crops are gathered, the animals grow thick, warm coats of hair or fur, and everything prepares for the cold of winter. In our part of the world spring

begins in March, but in the Southern Hemisphere spring begins in September. Thus we see that when we are having summer our neighbors in southern South America or Australia are having winter, and when we have winter they have summer.

Near the Equator, in low countries, the weather is hot all the year round, so the seasons are not called spring, summer, autumn, and winter as they are in our country. Near the Equator the seasons depend on the amount of rainfall and the winds. During or just after the rainy season plants grow very rapidly, but in the dry season they grow very slowly or may even wither and die.

SOME RELATED PROBLEMS

1. Why is your shadow longer at noon in winter than in summer?
2. Which way does your shadow point at sunrise? at noon? at sunset?
3. How many hours of sunlight are there in a June day? in a December day? (See almanac.)
4. Why is summer the best time of the year for the long school vacation?
5. Why does the sun seem to rise in the east and set in the west?
6. How many trips have you made around the sun since you were born?
7. When do the sun's rays shine most directly on us?

SOME THINGS TO DO

1. Try to show the earth in its two movements. Using an orange or apple for the earth and a knitting needle for an axis, walk around a lighted candle for the sun. As you walk around the sun, be careful to keep the earth turning on its axis from west to east. Also be careful to keep the axis tipped toward the North Star. Try to find the right position for March 21-22 and September 21-22.
2. In an old geography or an almanac try to find a drawing of the earth revolving around the sun. See if you can understand the picture.

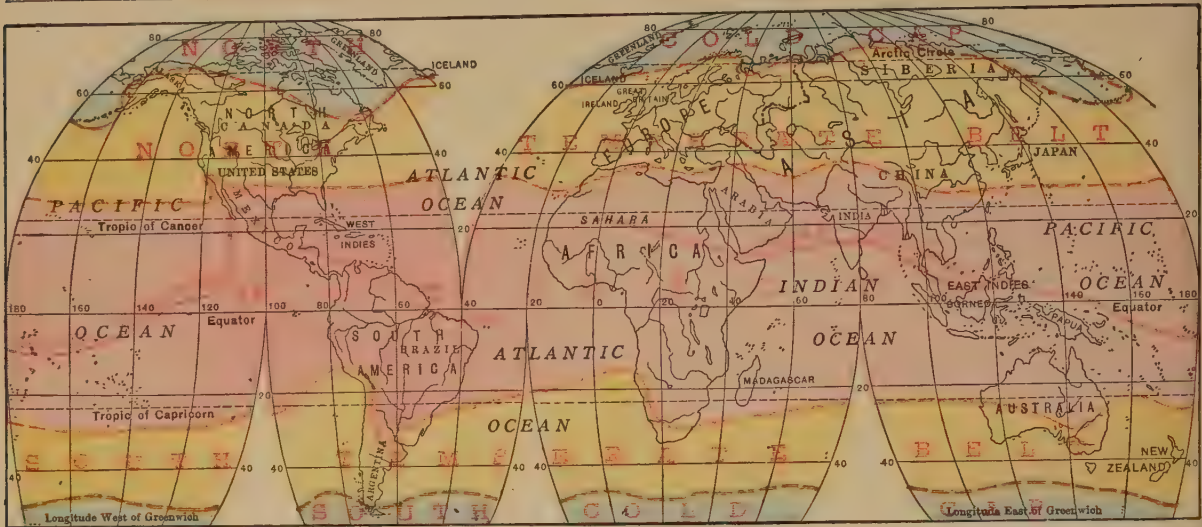


FIG. 111. The climatic belts of the world. Notice how closely the boundary lines of the Hot Belt follow the Tropic of Cancer and the Tropic of Capricorn.

53. THE WORLD DIVIDED INTO CLIMATIC AREAS

SOME THINGS TO LEARN

1. Names of the climatic regions of the world.
2. Where each climatic region is found.
3. Cause of these different climatic regions.
4. How heights affect climate.
5. Why the snow line is higher in some places than in others.
6. Why people often go to the mountains for the summer.

What is climate? Climate is the kind of weather a place has through a long number of years. As the years go by, we know that each month in the year any place has about a certain temperature, and that the coldest weather of winter and the hottest of summer are almost the same year by year. The number of cloudy or rainy days is nearly the same year after year. Throughout most of our country the wind blows from the west more than it does from the east. When we put together all these things which hold true year after year for a certain place, we can describe the *climate* of that place.

Why the earth's surface is divided into climatic regions. From our brief study of the continents we have seen that some parts

of the world are very cold, others very hot, and others only moderately cold or hot. We say that the climate of one section is different from that of another, and that because of the climate people live differently and do different kinds of work.

A place that has much rainfall throughout the year has a wet or rainy climate. A place where little or no rain falls has a dry climate. In places or in regions where the weather changes frequently but is never very cold nor very hot for a long period, the climate is temperate.

We find it is convenient to divide the world into five large climatic regions, or belts (Fig. 111). Within each region there are many places that are much alike in climate, in products, and in the ways in which the people live.

Where it is always hot. Bordering the Equator there is a wide region in which the lower lands are always very hot, and where the nights, as a rule, are as hot as the days. In some parts of this region the rainfall is heavy all the year round. In other parts rain rarely falls, while in still other parts we find a rainy and a dry season. This region is known as the *Hot Belt*.

The Hot Belt lies on both sides of the Equator and stretches entirely around the earth. Mexico, Central America, the West Indies, and southern United States are the only parts of North America in the Hot Belt. This belt includes, however, nearly two-thirds of South America, all of Africa but the areas farthest north and south, the southern countries of Asia, the northern two-thirds of Australia, and the islands of the East Indies (Fig. 111).

Where it is too cold for crops. Around the North Pole and extending about one-third of the way toward the Equator is the *North Cold Cap*, in which the climate is so cold that no crops can be grown. In those portions of the North Cold Cap lying farthest south, or nearest the Equator, the snow melts in summer, and some moss, grasses, and a few quick-growing plants thrive. No forests are found anywhere in this area, and only a few small shrubs and stunted trees grow here.

Within the North Cold Cap lie a large part of northeastern North America, including the large island of Greenland, nearly the whole of Iceland, and the most northern coast of Eurasia.

Around the South Pole is the *South Cold Cap*, which extends nearly one-third of the way to the Equator. The very tip end of South America reaches into this area, and Antarctica lies wholly within it.

Where all the great nations are found. Between the Hot Belt and the Cold Caps are the *Temperate Belts*, hotter toward the Equator but colder toward the poles. The Temperate Belts have summers when plants grow and people can live out of doors a great deal, and winters when in some sections the snow is deep and the cold intense. All the great nations of the world are in the Temperate Belts.

How elevation affects climate. We have learned that the climate gradually grows colder as one travels away from the Equator

and toward the poles. It is possible, however, to get just the same changes in climate in any part of the world by going up a mountain.

The fact that highlands are much cooler than lower-lying regions explains why many people go to the mountains during the summer season to keep cool, and why cattle that graze in the mountains during the summer often have to be driven down to the lowlands for the winter. The tops of the highest mountains everywhere, even in the Hot Belt, are covered with snow the year round (Figs. 112, 248).

In the Hot Belt one must go higher up the mountain sides to reach snow than in the Temperate Belts. In the Cold Caps perpetual snow, or snow that never melts, may reach down to the very foot of the mountains even in the warmest time of the year.

If one were at the foot of a very high mountain near the Equator, he would be in the Hot Belt. If he should climb up the mountain side he would soon be in a climate with cooler temperature. If he climbed still higher he would come to areas of very low temperature, with a climate like that of the areas about the poles, but he would still be in the Hot Belt.

SOME RELATED PROBLEMS

1. Why do so few people live in the Cold Caps?
2. Why is the warmest part of North America in the southern part, and the coldest part of South America in the southern part?
3. Why are the northern and southern parts of Africa colder than the central part?
4. Why do some people go to Florida to spend the winter?
5. Why would mountain streams furnish a fine water supply?

SOME THINGS TO DO

1. Let the children in the class represent people from different climatic regions of the world. Have them dramatize a story in which they tell of their homes and their occupations.



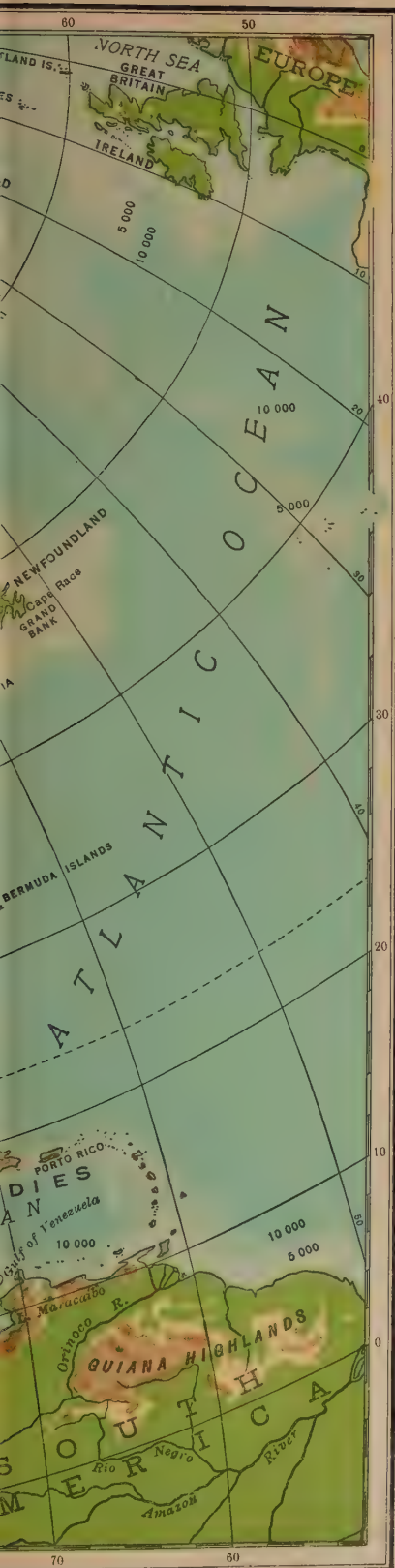
Official photograph, U. S. Army Air Service

FIG. 112. Grand Teton Range and Twin Lakes at Jackson Hole, Wyoming. Note the forests at the foot of the mountain and on the lower slopes, and the mountain streams which feed the lakes.

2. Write a short story about a trip by land from the southern tip of South America to the northern part of North America, using the following outline: (a) The clothing needed. (b) Some snow-capped mountains I saw. (c) People I saw along the way. (d) What the people were doing. (e) The growing crops I saw. (f) The animals I saw at different places. (g) What the people ate, how they were clothed, and the kinds of houses they lived in. (h) Some large cities through which I passed.
3. Write a short story entitled, "Our Trip up a Mountain."
4. Imagine yourself getting ready for a trip to a hot region and do the following: (a) Name the countries in the region you expect to visit. (b) Use an envelope to represent a suitcase, and fill it with pictures of clothing you will need on your trip. Do the same for a cold climate and a wet climate.
5. Find out what travelers must take with them when traveling in a hot, dry country. In what ways would such a country be different from your home region?
6. Study Fig. 112 and make out a list of all the surface features you have learned about in your study of geography. Perhaps you will find some features, of which you know the names, but about which you have not yet learned any facts. Grand Teton Range lies in the Temperate Belt of North America.



FIG. 113. A Relief Map of North America



PART III

THE CONTINENTS

NORTH AMERICA—OUR CONTINENT

54. WHAT THE RELIEF AND THE PHYSICAL MAPS SHOW

Problems:

1. Why is the Mississippi such a large river? (a) What great highland is in the western part of North America? (Figs. 113, 114.) How far does it extend? (b) What great lowland is in the center of the continent? How do you think people who came in ships from Europe reached this lowland? (c) What highland is in the eastern part of the United States? Can you find a way to get across it? (d) See if you can find where the rivers of North America begin to flow north. (e) What keeps them from flowing to the Mississippi? (f) How far is it in a straight line from the head of the Missouri to the head of the Ohio? (g) How far is it from the divide in Minnesota to the mouth of the Mississippi? (h) Give two reasons why the Mississippi is such a large river.
2. Why more people live in the eastern and central parts of North America than in the western part? (a) How does the population map (Fig. 116) show you where the greatest numbers of people live? (b) Which is the rougher part of the country? Which has the greatest extent of plain? (c) In which part of North America would you expect to find the most farming?
3. Why would you expect the plains bordering the Atlantic and the Gulf of Mexico to be more productive than the plains in the far north? (a) In which climatic regions does each plain lie? (Fig. 111.) Which has the greatest rainfall? (Fig. 115.) (b) What parts of North America are in the Hot Belt?
4. Why are the rivers along the eastern and western coasts shorter than those in the middle of the continent? (a) How far are the mountains from the coast in each case? (b) How far is it from the Rocky Mountains to the middle of the lowlands? (c) How far is it from the middle of the lowlands to the Appalachian Highland?
5. Why do people living in the northern, the central, and the southern parts of North America have such different kinds of food, shelter, and clothing? (a) In what climatic belt does each group live? (b) How does difference in climate make a difference in food plants produced? (c) What foods would you expect the people in the three sections to have? (d) How would you expect their clothing to differ? (e) their homes?



FIG. 115. A rainfall map of North America. Can you see any reasons why there are more people in the eastern part of North America than in the western part?

Questions:

1. What names are given to the different parts of the western highland?
2. What large bodies of water are at the north and at the south of the Great Central Plain?
3. What lakes lie south of Hudson Bay? What river forms the outlet to these lakes?
4. What large river flows into the Atlantic Ocean? What two flow into the Gulf of Mexico? into the Pacific Ocean?
5. Name three large branches of the Mississippi.
6. What two large lakes lie near the Arctic Ocean? How are they connected with it?
7. What large river flows into Hudson Bay? into the Gulf of California?

Essential names and places:

Study the maps, Figs. 113 and 114. Be sure you are able to name and locate the following on an outline map: Cordilleran Highland, Appalachian Highland, Great Central Plain, Rocky Mountains, Mexican Plateau; Great

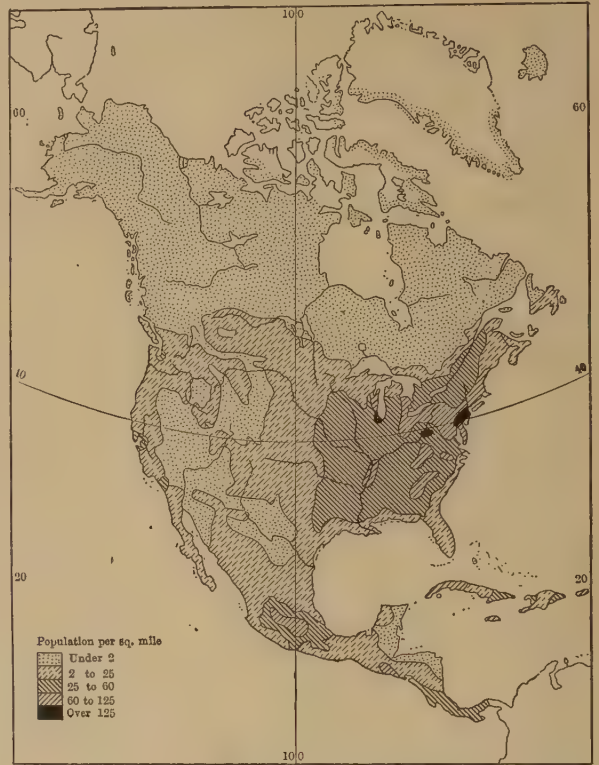


FIG. 116. A population map of North America. On this you can easily find the sections where many people live, and also the areas in which there are fewer people.

Lakes; the Mississippi, Columbia, Mackenzie, and St. Lawrence rivers; Hudson Bay, Gulf of Mexico, Arctic Ocean, Caribbean Sea; Florida, West Indies, Greenland.

55. COUNTRIES AND PEOPLES OF NORTH AMERICA

SOME THINGS TO LEARN

1. Names of the three leading countries of North America.
2. The size of the United States.
3. Two things about the size, the population, and the extent of Canada.
4. Some facts concerning our southern neighbors.

Our own country. The most important country in North America is our own country, the United States. It lies in the middle of the continent and extends from the Atlantic to the Pacific Ocean, a distance of about three thousand miles. The distance from the *Great Lakes* on the north to the

Gulf of Mexico on the south is more than a thousand miles. *Alaska* in the northwestern part of the continent and the *Canal Zone* in the extreme southern part belong to the United States, as do many islands in the Pacific and several in the Atlantic. More than one hundred million people live in our country.

The United States dates its history as a nation from July 4, 1776, when the Declaration of Independence was signed (Fig. 117). Before that time this country belonged to England in Europe and was divided into several colonies. In 1776, when the country became a nation, the people all lived within a very short distance of the Atlantic coast. Since that time the United States has grown into one of the largest and most important nations of the world.

Our northern neighbors. Just north of the United States is the *Dominion of Canada* (Fig. 119). This country extends from the Atlantic on the east to the Pacific on the west, and from the United States north to the Arctic Ocean. Although the United States, including Alaska, is not quite so large as Canada, it contains more than ten times as many people.

Canada, though a part of the British Empire, is practically an independent country, for the people make their own laws and run their own government.

Our southern neighbors. South of the United States is *Mexico*. It is about one-fourth as large as our country, and has about one-seventh as many people.

Lying between Mexico and South America is *Central America*. It includes a group of small countries, all lying in the Hot Belt.

The *West Indies*, a large group of islands southeast of the United States, are considered a part of North America. Some of these islands belong to the United States, some to Great Britain, and others to France. Two of the largest islands, *Cuba* and *Haiti*, are independent countries.

The United States is about ten times as large as Central America and the West Indies together, and has about nine times as many people.



FIG. 117. Independence Hall, Philadelphia. This hall is the birthplace of the United States of America. What famous agreement was signed here? How do we celebrate the event?



Courtesy of Dept. of Interior, Canada
FIG. 118. Bow River Falls in Alberta, Canada. This is a view in the Rocky Mountains in western Canada, famous for the beauty of its scenery.

56. WHAT THE POLITICAL MAP SHOWS

Problems:

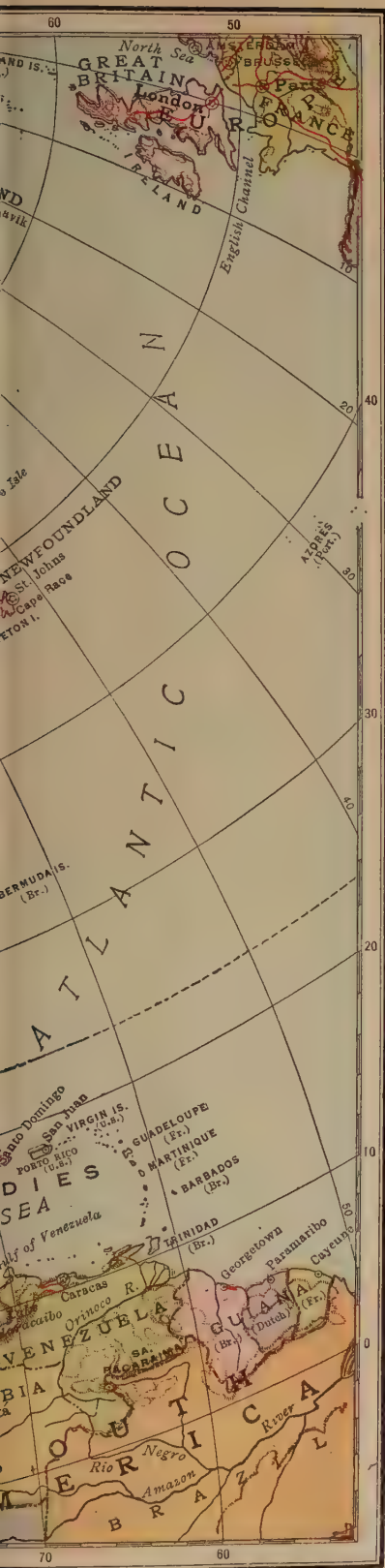
- When studying a map, how may you be sure of the direction one place is from another? (a) What is the direction of the line (parallel) that passes across the United States near Denver and near Philadelphia? (b) What is the direction of the parallel that passes through southern Alaska, the middle of Hudson Bay, and near the southern end of Greenland? (c) Keeping in mind the answers to *a* and *b*, what direction is Siberia from Alaska? (d) What direction is France from Newfoundland? (e) What is the direction of the line (meridian) that passes through Lake Superior and the city of New Orleans? (f) What is the direction of the meridian that passes through Cape Cod and the Dominican Republic in the West Indies? (g) Keeping in mind the answer to *f*, what direction is Charleston from Boston? (h) What direction are the middle Aleutian Islands from Bering Strait? (i) Study a globe to see if your answers to the above questions are correct.
- How is one able to tell one country from another on a political map? (a) How is the boundary between the United States and the Dominion of Canada shown? between the United States and Mexico? (b) How many different colors are used to show countries on the map of North America? (c) Why are Alaska, Porto Rico, and the United States shown in the same color? (d) Why is Greenland not shown in the same color as the Dominion of Canada? To what nations do these countries belong?
- How are facts of special interest about cities shown on the political map? (a) What is the capital of the United States? the Dominion of Canada? Mexico? How are these shown on the map? (b) What are the three largest cities in North America and how are they shown on the map? (c) How many cities in North America have from 500,000 to 1,000,000 people? (d) How are railroads shown on the map?

Questions:

- What country lies north of the United States? to the south?
- In which part of the United States do you live? What is the direction of Washington from your home?
- What large area in the upper left-hand corner of the map belongs to the United States?
- Find in Central America an area belonging to the United States.
- How far is it from New York to San Francisco? from New Orleans to Duluth?
- How many small countries are there in Central America?
- According to the map, which is farther north, Winnipeg, Canada, or Paris, France? How can you tell?

Essential names and places:

Study Fig. 119 and be able to locate the following on an outline map of North America: the leading countries and their capitals; the five largest cities; West Indies, Caribbean Sea, Bering Strait, Hudson Bay, Alaska, Labrador.



57. SOME OF THE REASONS WHY NORTH AMERICA CONTAINS SEVERAL GREAT NATIONS

SOME THINGS TO LEARN

1. Some results of the size and position of North America.
2. Why North America has a variety of climate.
3. What parts of the continent and what countries are in the different heat belts.
4. Names of the larger highlands and lowlands of North America.
5. Why the plains of North America contain the greatest number of people.
6. Names of important rivers and lakes of North America, and why they are useful.
7. Why the rivers near the western coast are short.
8. Why the rivers of the far north are not used much for traveling.

Its size. North America is third in size among the continents, being about one-half as large as Asia and two-thirds the size of Africa (Fig. 97). Its land area extends from near the Equator almost to the North Pole, and thus lies in several heat belts (Fig. 111). Its three largest countries, the United States, Canada, and Mexico (Fig. 119), contain more than one hundred and twenty-eight million people, and they have room for many more. These great countries, so important

for their industries and trade, have been developed since the continent was discovered by white men a little over four hundred years ago.

Its position. Before Columbus sailed westward in three little ships in the year 1492 and discovered the New World, the people of the Old World did not know of the continent on which we live.

It took Columbus about two months to cross the Atlantic, but now one can travel to Europe almost as quickly as one can cross the United States in a fast train.

North America is within less than a week's sail from the densely populated countries of western Europe. These countries need and use food and raw materials from our continent. Africa is the only other continent so near to the great markets of Europe, and in Africa agriculture and other industries have not been developed as they have been in North America.

Rapid means of travel have also brought us close to South America and not many days' journey from Asia and Australia. In every way North America is well located to carry on trade with each of the other continents of the world.

Its varied climate. The fact that North America extends so far north and south



FIG. 120. Mountains, climate, and vegetation.

It is so cold on this mountain that plants cannot grow on its summit.

Why are trees growing in the valley and on the lower slopes?

Why do the trees become smaller and fewer on the higher slopes?

What kind of trees grow in cold climates?

How do people travel in a country like this?

explains why it has such a variety of climate. The northern part, in the Cold Cap, is inhabited mostly by tribes of Indians and Eskimos who live largely by hunting and fishing. Much of the cold part of North America is in the Dominion of Canada (Figs. 111, 120).

The central part of the continent, which includes southern Canada and all the United States except a small part in the extreme south, lies within the North Temperate Belt. Within this belt all the important industries may be carried on, even those which require people to work out of doors all the year round. As a result, this portion of the continent is the home of the great nations which have developed agriculture and the many other industries that furnish so many kinds of food and manufactured products.

The southern part of North America lies in the Hot Belt (Fig. 121). In this belt are included a part of southern United States, and all of Mexico, Central America, and the West Indies.

In each heat belt the highlands are colder than the near-by lowlands, and those facing the winds have more rain than those on the opposite side of the mountains. The parts of the continent far from the oceans have cold winters and warm summers.

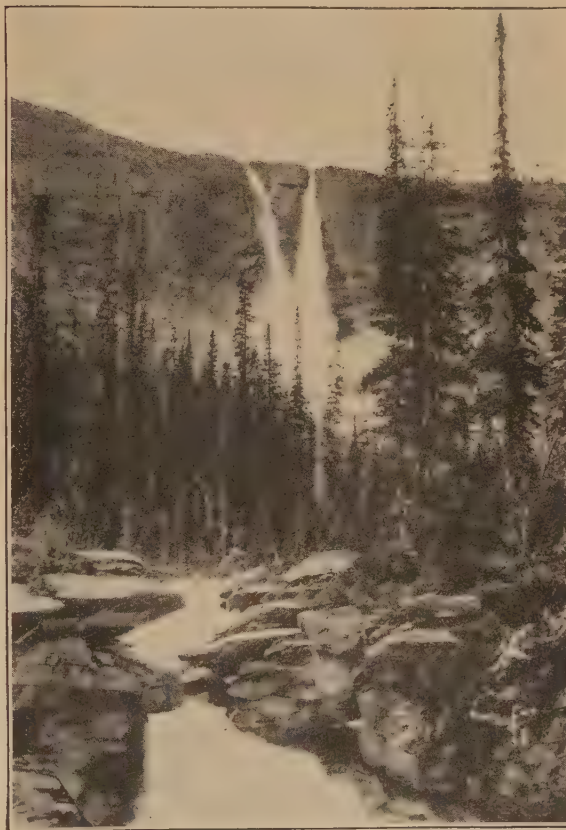
Its varied surface. The physical map (Fig. 114) shows us that North America contains two highlands and a great central lowland. The *Cordilleran Highland* occupies much of the western part of the continent and extends from Alaska to Central America. This western highland is broad and in places very high. It is made up of many high plateaus and lofty mountain ranges (Fig. 122). The eastern ranges of this highland are called the Rocky Mountains, a name sometimes wrongly given to the whole area.

The *Appalachian Highland*, in the eastern part of the continent, is not so high nor so broad nor so long as the western highland (Fig. 123). Densely populated lowlands



Publishers Photo Service

FIG. 121. A scene in the Hot Belt of North America. This is a scene in Porto Rico in the Hot Belt. To whom does Porto Rico belong? How do the trees differ from those farther north? Why is it easy to feed farm animals in this region?



Courtesy of Dept. of Interior, Canada

FIG. 122. Twin Falls, British Columbia. These falls are in the Cordilleran Highland in western Canada. Notice the steep slope over which the waterfalls leap, and the notches the waters have cut in the top of the cliff.

surround it, and the names of many of its plateaus and mountain ranges are well known.



FIG. 123. A valley in the Appalachian Highland. The valleys are not so deep as are many in the Cordilleran Highland, neither are the mountains so high. Why was the railroad not built nearer the river?

The *Great Central Plain* lies between the two highland areas and extends from the *Gulf of Mexico* northward across the United States and Canada to the Arctic Ocean. A slight elevation or low divide running irregularly east and west across the Great Central Plain separates the streams flowing northward into the cold Arctic Ocean from those flowing southward and eastward into the warm Atlantic and the Gulf of Mexico (Figs. 113, 114). The southern part of this great plain is one of the most important food-producing regions of the world (Fig. 124).



East and south of the Appalachian Highland lie the narrow Atlantic and Gulf plains. The *Atlantic Coastal Plain* was the first part of the country to be occupied by white men. Both of these areas are thickly settled by people engaged in agriculture or other profitable industries.

Along the Pacific coast the mountains are so close to the ocean that near the coast there are only a few long, narrow areas where people can live. The cities of this section, therefore, are found only in a few favored places, while in the east cities are numerous throughout the coast region.

Its rivers and lakes. In general, the great river basins of North America are bounded by the highlands. It is interesting, however, to note that the *Hudson*, *Delaware*, *Susquehanna*, and *Potomac* flow through the higher parts of the Appalachian Highland to the Atlantic Ocean and thus furnish easy routes for railroads and roads from the coast to the interior of the country. Along the Pacific coast only two rivers find their way through the mountains to the ocean.

The rivers flowing down the eastern slope of the Appalachian Highland and the western slope of the Cordilleran Highland are

FIG. 124. A farm scene in Ohio.

What do you see that makes you think this is a good farming region?

What season of the year do you think it is?

What do you suppose the farmer expects to do with the shocks of corn?

Which way do you think the wind is blowing?

For what purpose is the large building in the center of the picture used?



FIG. 125. River boats at Cairo, Illinois. The Ohio River joins the Mississippi at Cairo. What kinds of freight do you think these boats carry? How far south may these boats go? Why do they have paddle wheels behind and not on the sides?

short and rapid because in most places these highlands are so near the ocean.

The slopes from the highlands toward the interior of the continent are long and gentle. The streams from east, west, and north that drain the southern part of the Great Central Plain unite to form the *Mississippi*, the greatest river in North America. The longest tributary of the Mississippi is the *Missouri* flowing from the western highlands. The Missouri and Mississippi together form the longest river in the world.

From the divide just north of the Great Lakes the rivers flow northward down the long slope toward the Arctic Ocean. As a result the headwaters of these rivers thaw out earlier in the spring than do the courses nearer the sea, and thus cause great floods in the lower portions of their valleys in early summer. The best time to travel across country in this region is in the winter, when the rivers and lakes are frozen. The streams are navigable only for a few weeks in the middle of the summer. These far northern lands are very sparsely settled and are not well known. They are a hunting country in which many kinds of wild animals are found.

In the temperate portion of North America many of the large river valleys are important routes for trade and travel (Fig. 125). Before the white men brought horses to America the Indians traveled by water or on foot. The early explorers and settlers of North America followed the rivers and lakes to reach the interior. Rivers and river valleys always have been used as highways, first by animals, then by Indians, and later by the white men.

Some rivers have falls, rapids, and shallows that once made long journeys on these streams difficult. Now, in the streams and lakes most used, canals and locks have been built around these dangerous places so that freight can be carried longer distances without being unloaded. The most important canal in our country is the "*Soo*" Canal, which connects Lake Superior with Lake Huron (Fig. 126).

Canals are sometimes built to make a water route where there is no river large enough to be used. The best illustration of such a canal in the United States is the *Erie Barge Canal*, which connects the Hudson River with Lake Erie. This canal is especially



Official photograph, U. S. War Dept.

FIG. 126. Ore boat passing through a lock in the "Soo" Canal. Where is the "Soo" Canal? Why were locks and a canal needed here? What two lakes does this canal connect? Canada also has a canal around the falls here.

useful for carrying goods by water between the cities of the East and points farther inland, or in the opposite direction (Fig. 127). Many of the early settlers made their way into Ohio and other states of the Middle West by way of the Erie Canal.

SOME RELATED PROBLEMS

1. Why should hunting be the chief occupation in the cold region of North America?
2. Why are there so few people in northern Canada?
3. Why does the United States have more people than Canada or Mexico?
4. Why does the windward side of a mountain range have more rainfall than the leeward side?
5. Look at the rainfall map of North America and find out where the regions of greatest and least rainfall are located.
6. Of what special value are rivers in a new country?
7. How are rivers and river valleys used by explorers?
8. What do we mean by the "boundary" between two countries?
9. Try to find out what "portages" are and locate some used by the early explorers of North America.

SOME THINGS TO DO

1. Imagine yourself getting ready to spend a winter with a trapper in Canada. Make a list of all the things you would need for a trip of this kind. Through what part of the country would you go?
2. Get all the pictures of wild animals you can find, and arrange them in groups for each continent. Use post cards, magazines, and newspapers.

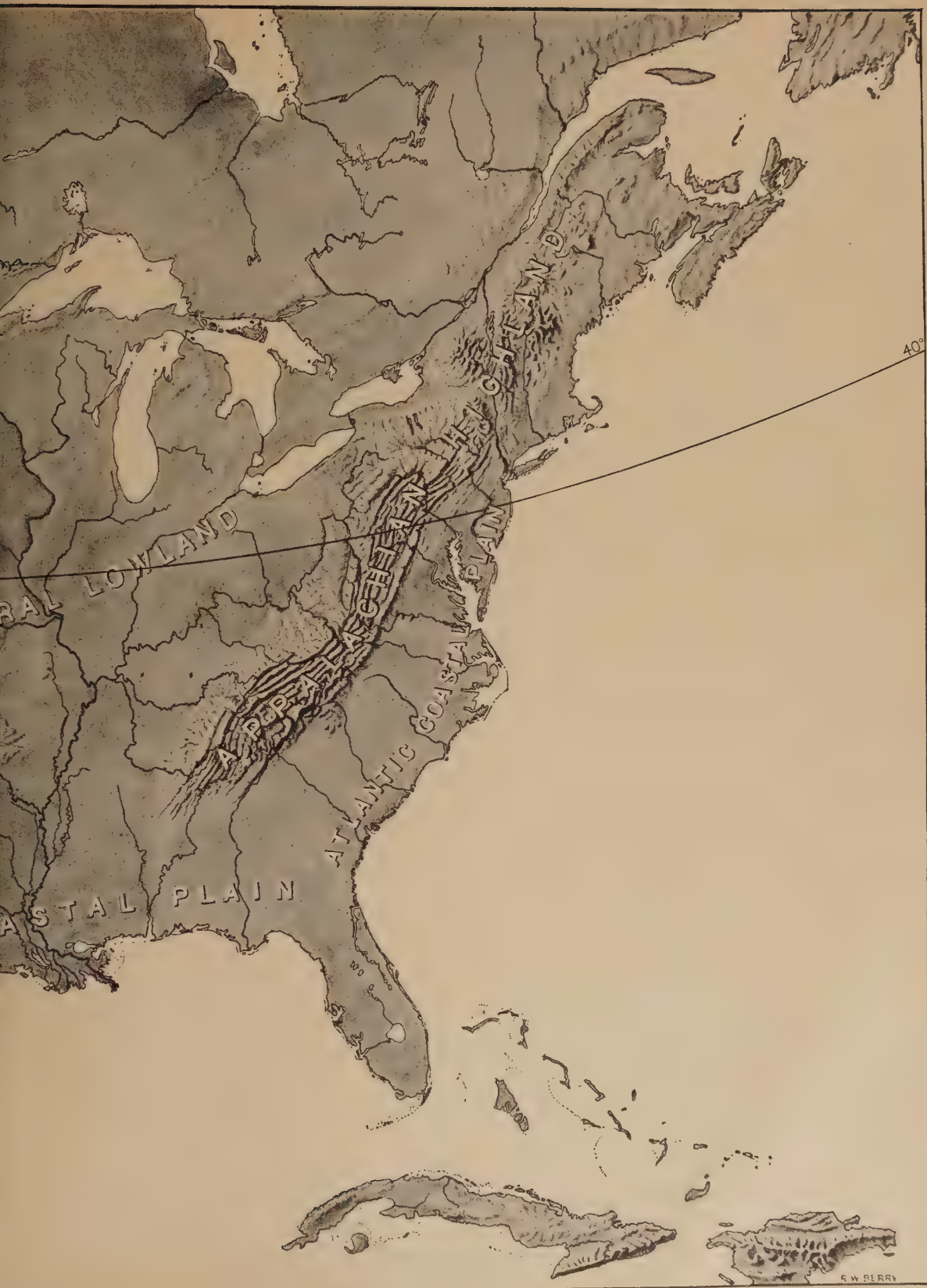


Courtesy of Chamber of Commerce, Rochester, N. Y.



Courtesy of Roy G. Finch, State Engineer, New York state

FIG. 127. Two views of the Erie Barge Canal. This canal was one of the earliest built in the United States. It has been enlarged several times. The upper view was taken in the Genesee Valley near Rochester, New York. The lower view is near the point where the Mohawk joins the Hudson. The lock in the background at the right is one of a series of five.



THE UNITED STATES

58. SOME THINGS THE RELIEF AND THE PHYSICAL MAPS SHOW

Problems:

1. How do the physical and relief maps of the United States help one to picture the country? (a) Find the rough or rugged lands as shown on the relief map. How are they shown on the physical map? (b) How are the highest areas shown on the physical map? See if you can get the same information from the relief map. (c) In what direction do the Appalachian Mountains extend? the Rocky Mountains? (d) In what ways is the physical map of the United States a more helpful map than the relief map? (e) What do you like best about the relief map?
2. Where on the map (Fig. 133) do we find the greatest number of railroad lines? Give some reasons for this. (a) See if the population map gives you a reason (Fig. 131). (b) Where are most of the people? (c) Where is there little rainfall? (Fig. 132.) (d) Where is the country level, and where rough? (Figs. 128, 130.) (e) Look at the product maps (Figs. 138, 150, 159, 175, 193), and tell where there is the greatest need for railroads.
3. Give two reasons why you would expect the Mississippi Valley to have been explored before the Great Plains. (a) How do people generally travel in a new country? (b) How would explorers have to travel on the Great Plains? (c) How in the Mississippi Valley? (d) Which is nearer the Atlantic Ocean? (e) Which is easier to reach from the East? (f) Why do you think the Indians liked to live in the Great Plains region?
4. How does your home state compare in size with Maine? (Use Fig. 133, the scale of miles, and the Appendix.)

Questions:

1. Over what plains, plateaus, and mountains would you travel in going directly west from the mouth of the Ohio River to the Pacific Ocean?

2. What large bodies of water touch the United States? what countries?

Essential names and places:

Study the maps, Figs. 114, 128, and 130. Be able to name and locate the following on an unlettered map of the United States: Great Lakes and Great Salt Lake; Mississippi, Missouri, Ohio, St. Lawrence, and Hudson rivers; Rocky Mountains, Sierra Nevada, Coast Ranges, and Cascade Range; Appalachian Highland; Gulf Coastal and Atlantic Coastal Plains, Great Central Plain, Great Plains; Columbia and Colorado plateaus, and Great Basin.

59. HOW OUR COUNTRY BEGAN AND GREW

SOME THINGS TO LEARN

1. Who occupied the land when white men first came to America.
2. How the Indians lived.
3. Why Indians are sometimes called red men.
4. Why Indian tribes warred with one another.
5. Why the white people first settled along the eastern coast.
6. Why it took so long to settle the central and western parts of the United States.
7. Where the thirteen colonies were, and to whom they belonged.
8. How the thirteen colonies became the first thirteen states.
9. How the United States has grown in area.
10. What our flag shows.

The home of the Indian. When white men first came to America, they found the land already occupied by the Indians. To be sure, there were not many of them, but they were spread out over the whole country and lived largely by hunting and fishing, although they raised some crops.

The Indians lived in groups called tribes. Each tribe was known by a certain name, and occupied certain parts of the country (Fig. 129). The tribes frequently were at war with their neighbors, for each tribe wanted to get the best hunting ground for its own people.



FIG. 129. A village of Wichita Indians. Some of the Indians of today live in much the same way as the Indians did when our country was first discovered by white men. This tribe lives in Oklahoma. Of what are the houses made? Can you tell how they cook their food? Can you find out which section of the country was the home of the Wichitas?

The Indians are often called red men. They are not red, however, but a dark copper color. As a rule, the Indians were tall and straight, with fine athletic bodies. They were fierce fighters and fought many wars with the white men during the years in which they were slowly being forced to give up their lands.

The first white settlers in America. The low plain east of the Appalachian Highland was the first part of the present United States to be settled by white men. This was because the people who first discovered and occupied America came across the Atlantic Ocean from Europe to the eastern coast. They made their homes near the coast or along the rivers wherever the best places were to be found. Later settlers crossed the Appalachian Highland and began to occupy the *Central Lowland*. The land was gradually cleared of forests, farms were made, towns grew up rapidly, and finally every part of the country was occupied.

The thirteen colonies. In less than two hundred and fifty years after America was

first discovered by Europeans, thirteen colonies of white people from Europe had been formed along the Atlantic coast. These all belonged to England. In 1775 these colonies began a war with England and in the following year they declared themselves a new nation and took the name of the United States. The thirteen red and white stripes in our flag stand for the number of states that made up the Union at the close of the war.

How more land has been added. From this small nation the United States has grown until now it contains forty-eight states, as is shown by the forty-eight stars in the corner of our national flag.

On the continent of North America are two other areas that belong to the United States. These are Alaska in the far northwest and the Canal Zone in the far south.

Our country also owns a number of islands in different parts of the world. The most important are *Porto Rico* and the *Virgin Islands* in the West Indies, and the *Hawaiian Islands* and *Philippine Islands* in the Pacific Ocean.



FIG. 130. A Physical



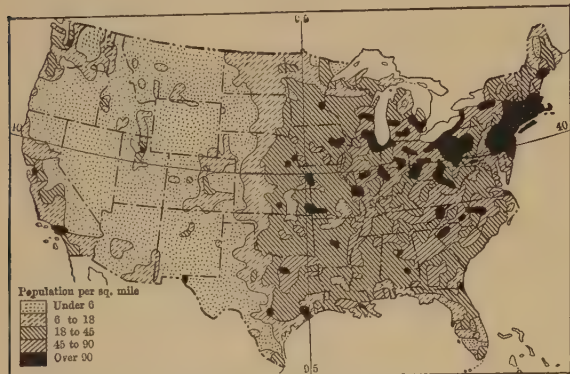


FIG. 131. A population map of the United States. Locate New York, San Francisco, St. Louis, Boston, and Chicago.

60. HOW THE POPULATION HAS INCREASED

SOME THINGS TO LEARN

1. How the United States has grown in population.
2. What has caused this growth.

Our growth in population. In 1790, soon after the close of the War of the Revolution, the new nation had nearly four million people. In 1920, one hundred and thirty years later, the population had increased to more than one hundred million. This is nearly twice as many people as there are in any nation in western Europe. France and Germany together do not have as many people as live in the United States.

This great increase in population is due in part to the fact that many people have come from Europe to make their homes in the United States. The parents or grandparents of a large number of our people were born in Europe.

In addition to the Europeans who have come to our land, there are some Japanese and Chinese who have come from Asia, and several million negroes whose forefathers were brought here from Africa.

There are still many Indians in the United States, most of whom live in the western part of the country on *reservations*, that is, on areas of land set apart by the United States government especially for their use.

61. THE BEGINNING AND GROWTH OF INDUSTRIES

SOME THINGS TO LEARN

1. How industries were carried on in early days.
2. Why home industries gave way to industries on a larger scale.

Early home industries. When our country was still new, more than one hundred years ago, most of the people lived in the country or in small villages. Each family produced at home nearly all the food and clothing that was needed. The farmers raised grain, vegetables, and animals for food. Dried fruit and cured meats were prepared by the women for winter use. In the home, wool was spun into yarn and woven into cloth from which clothing was made. Every community produced nearly all the things needed by its people. There was little trade between one part of the country and another.

Why special industries have developed. Today it is very different. While in many farming areas the people raise much of the food they need, few sections can produce all the necessities of life. Instead, the regions best suited for agriculture raise food for people living where manufacturing and other industries can best be carried on. Each part of our country has become known for the kinds of industry that have been developed there. The northeastern states are known for manufacturing; the western part of the Great Central Plain is a grazing region; and the southern and central parts of the country lead in agriculture. Agriculture, mining, and lumbering thrive in the Pacific states. In each section there are many kinds of industry being carried on, but each area is noted for that industry which furnishes work for the largest number of people.

As we study different parts of our country, we shall learn why certain industries thrive best in certain regions; how and why goods are carried from place to place; and why some areas contain more people than others.

62. SOME THINGS THE POLITICAL MAP SHOWS

Problems:

1. Where do the people of the United States live?
 - (a) How does the population map show that more people live in some parts of the country than in others? (b) In which states are there more than ninety people per square mile? (c) Which two states show less than six people per square mile over nearly all their area? (d) What large cities are located in the two densely populated areas of California? (e) There are three small areas in Texas with many people in each. What cities help to explain this? (f) What large city forms the only densely populated area of Utah? (g) What large cities help to explain the location of the two most densely populated areas in Pennsylvania?
2. What bodies of water and what countries border the United States?
 - (a) What states touch Mexico? (b) What states west of the Great Lakes border Canada? (c) What lakes and what rivers separate the United States from a part of Canada? (d) How many states touch the Atlantic Ocean? (e) Name the states which touch the Gulf of Mexico. (f) What states border the Pacific?
3. See if you can prove that the smaller states as a rule have more people per square mile than the larger states.
 - (a) Make a list of the ten largest states and also of the ten smallest, and the density of population of each. (See Appendix.) (b) How many people are there per square mile in the largest state? in the smallest? (c) Does the list help to prove the problem?

Questions:

1. What states would you pass on a trip down the Ohio from Pittsburgh to the Mississippi?
2. In what states are the Rocky Mountains?
3. What states are bordered by the Mississippi River?
4. On the political map find the dotted line marking the boundary of the Great Basin, and name the states through which it passes.



FIG. 132. A rainfall map of the United States. Which section will support most people? What mountains are in the rainy sections of the western states?

63. WHY THE UNITED STATES HAS GROWN

SOME THINGS TO LEARN

1. How the climate has favored the growth of the United States.
2. How our railways and waterways have helped in the development of the country.

The favorable climate. The United States, lying mostly in the Temperate Belt, has a climate that is suited especially to white people. In summer it is not too hot nor in winter too cold for health. Yet the summers are long enough and warm enough to produce a great variety of crops. The southern, warmer section raises cotton, oranges, sugar cane, and rice; while farther north such crops as wheat, oats, corn, and hay are grown.

The United States has a heavy rainfall on the northwest and southeast coasts (Fig. 132). In much of the western highlands the climate is very dry, while in the *Mississippi Valley* and eastward there is plenty of rainfall to produce crops. On the western coast most of the rainfall comes in winter, in the central part most rain falls in summer, and in the eastern part summer and winter have about equal amounts.

These differences in temperature and rainfall make possible many kinds of agricultural work and the raising of a large variety of products in the different sections.



FIG. 133. A Political

The lay of the land. Even where the climate is favorable for people, not all parts of the land can be used equally well (Fig. 130). Regions with gentle slopes make better farming land than do rough and hilly regions (Fig. 134); they furnish the best sites for large cities; they make possible the building of roads and railroads in almost any direction. The large rivers of these regions are usually not so swift and can be used as highways for travel.

Most of the people in our country live on the lowlands and plains, but the highlands and mountains have their uses too. Some are grazing regions and others are covered with valuable forests (Figs. 135, 136). Some contain minerals of value and have become mining regions. Many highland areas are of great service because they are vacation lands. Mountain streams often furnish water for irrigation and water power for making electricity. Our country, with its varied surface of plains, plateaus, and mountains and its great variety of climate, is sometimes called the "land of opportunity." Anyone can find somewhere in this great country the opportunity to work at what he likes best and make a living.

Our railways and waterways. The Great Lakes and the large number of rivers made it easy for the early settlers to reach the interior

of the country. Then came the railroads that really brought the older section of the East nearer the West. Now one can travel in a day as far as he could in weeks in the days when roads, rivers, and canals were the only routes of travel. Railroads were built easily all through the eastern part of the country. They made trade possible and helped bring about the changes that make our way of living today so different from that in the early days.

The productive soil. The United States is fortunate in its great areas of fertile soil. The early settlers both in the East and in the West found it easy to raise good crops because the soil and climate were so favorable. As new regions of good soil were discovered in the West, people moved from the East to settle there. They did this partly because of the rich lands and partly because they liked to move into a new country and help develop it. These pioneers who came from the East to the West started the rich and prosperous states of today. Many people from Europe also have come to settle on the rich lands and in the cities.

Our free government. In the United States nearly every grown person may vote and help select the men and women who make the laws and become officers of the government. In most of the countries of Europe



J. C. Allen

FIG. 134. Preparing ground for planting.

These horses are pulling three farm implements.

The man is riding on a spring-tooth harrow.

The harrow with the many wheels is a disk harrow, and trailing behind is a smoothing harrow.

What do these harrows do to the soil?

FIG. 135. A western sheep ranch.

In the region shown here the climate is too dry for growing crops.

Why is it a good place for sheep?

Why do the trees grow only in the valleys?

How would you describe the surface of this region?

When winter comes, what will have to be done with the sheep?



Brown Bros.

This has not been true. Partly for this reason, many people of the Old World have come to the United States to share in our liberal government, to enjoy the benefits of our free public schools, and to make a better living.

SOME RELATED PROBLEMS

1. Why is it more expensive to build railways in some parts of the country than in others?
2. Why was the War of the Revolution fought on or near the eastern coast of the country?
3. When did your state become one of the United States?
4. Who were some of the first white people to sail on the Great Lakes and the Mississippi River?
5. Who was the first white man to cross the Appalachian Highland and settle in Kentucky?
6. Why are there so many more railroads in the eastern and central parts of the United States than in the western part?
7. See if you can find some railroads which are named from early roads and trails.

SOME THINGS TO DO

1. Write a play bringing in the different nationalities that have come from the Old World to America. Each representative should tell something of his native land and why he came to America.

2. Take a trip in imagination to some part of the United States and tell your experiences. Make a scrapbook of pictures of some early settlers of our country. Write the name beside each one. You can find pictures in magazines, newspapers, and old histories.



Courtesy of U. S. Dept. of Agriculture

FIG. 136. A mixed stand of Norway and jack pine. Forests of these trees are found in many sections of north-central and eastern United States.

THE NEW ENGLAND STATES

STATE	ABBREVIATION	STATE	ABBREVIATION
Maine.....	Me.	Massachusetts....	Mass.
New Hampshire..	N. H.	Rhode Island.....	R. I.
Vermont.....	Vt.	Connecticut.....	Conn.

64. WHAT THE MAPS TELL US ABOUT
NEW ENGLAND

Problems:

- How does New England compare in size with the state of Missouri? (a) Which appears larger from the sectional maps? (Figs. 137, 156.) (b) Turn to the Appendix and add up the areas of the New England states. (c) How large is Missouri as compared with New England?
- Why is it important to know the scale when studying maps? (a) What is the scale on this map? (b) What is the scale on the map showing Missouri? (Fig. 156.) (c) How can you find the distance from one place to another on a map?
- Where are most of the large cities in New England? (a) How many large cities are ports? (b) How many are on rivers? (c) Which state has the most large cities? (You can tell this by the sizes of type.) (d) What industry would you expect to find in the states where there are the fewest cities? (e) If you were choosing a home in New England, where would you like to have it? Give your reasons. (f) Draw the largest square possible in Texas (Fig. 156). See how a square of this size fits on New England. (g) In this group is the smallest state in the Union. Which one is it?
- How far is it in a straight line from Bridgeport, Conn., to Eastport, Me.? from New York to Boston? On the map of the United States, find how far it is from Boston to Chicago.

Questions:

- In what part of the United States is New England?
- How many states are in the New England group? Which is the largest? Which is the smallest?

- Which state does not touch the ocean? Which states touch New York? Canada?
- What direction is New England from the state of Virginia? How far is it from your home to Boston?
- What mountains are in Vermont? in New Hampshire? Name two peaks.
- How deep is the ocean just off the coast of New England? (Fig. 130.)
- What rivers drain this region? How many large lakes can you find in New England?
- What large cities are located on the coasts? Which ones are on rivers and lakes?

Essential names and places:

Study the maps, Figs. 130, 133, and 137. Be able to name and locate the following on an unlettered map: White and Green mountains; Connecticut, Merrimack, and Kennebec rivers; Moosehead and Champlain lakes; Mount Washington; Cape Cod, Cape Cod Canal, and Long Island Sound; all states and the largest city in each; the cities of Fall River, Worcester, Springfield, Hartford, New Haven, and Gloucester.

65. WHAT THE FARMS PRODUCE

SOME THINGS TO LEARN

- Five interesting things about the surface of New England.
- Why farming is more successful in the lowlands than in the highlands.
- Why farms are not large.
- Why truck farming is important.
- Why dairying is carried on in all the states.

The surface of New England. Much of *New England* has a rolling surface with many hills and valleys. Some parts are very rugged, and the winding river valleys are deep and narrow. Only along the coast and in some river valleys is the land low and nearly level (Fig. 137). The higher parts are mountains of which the *Green Mountains* in Vermont and the *White Mountains* in New Hampshire are the best known. Much of the surface of New England is covered with forests, even in the most thickly settled states. In New England are



FIG. 137. A Map of New England and the Middle Atlantic States

thousands of lakes, especially in the northern states. These lakes are useful in many ways and add much beauty to the scenery for which New England is famous.

Where farming is done. Agriculture is most successful in the lowlands and river valleys, because of the better soil and the gentler slopes found there. Railroads and roads naturally follow the valleys, and in the lowlands are found most of the cities. Thus the products of the farms can be taken easily to a near-by market.

The size of the farms. There are farms everywhere in New England except in the higher, rougher regions (Fig. 53). Most of the farms are small. This makes it possible for people to live near one another. In every farming section there are many small villages and towns. As one rides through the country, he sees many fields of hay and corn, for nearly every farmer has cows and horses that must be fed. Many of the fences are stone walls piled up from rocks taken from the fields. Stone walls, scattered apple trees, and cattle grazing on the hillside pastures make many of the farming sections of New England very picturesque. In northern Maine are great fields of potatoes, and in the lower Connecticut Valley broad fields of tobacco (Fig. 138).

Why dairying is a thriving industry. Dairy farming is carried on all over New England, for the large cities and the many manufacturing towns must have fresh milk daily. Most dairy farms also raise some apples, potatoes, winter vegetables, poultry, and eggs, which are also sold in the cities.

In northern New England some butter and cheese are made, because the farms are too far away to send milk every day to the large cities (Fig. 138).

Other crops. In many sections of New England the orchards are important. Apples are raised in all the states, and peaches in the states farthest south. Near the large

cities are great gardens where summer and winter vegetables and small fruits are grown, all of which are sold in the cities and towns.

Another product of northern New England is maple syrup. This is made in the early spring by gathering and boiling the sap of hard maple trees. Some of the sap is made into maple sugar (Fig. 138).

66. FISHING AS A BUSINESS IN NEW ENGLAND

SOME THINGS TO LEARN

1. Why the fishing industry developed in New England.
2. How fish are preserved.
3. What deep-sea fishing is.
4. Why deep-sea fishing is a dangerous occupation.
5. Why whale fishing was once a great industry.

The need for food. In the early days of New England the people took up fishing in the near-by ocean to get food. Much of the fish was dried and cured to be sold in other countries. Fishing was long one of the most important occupations in New England, and still employs a large number of people. New England is the part of our country nearest the fishing grounds of the Atlantic.

Where fishing is carried on. The physical map of the United States (Fig. 130) shows that the ocean all along the coast of New England and northward is shallow.

In this shallow part of the ocean are found great numbers of cod, halibut, and other food fishes. Fish live in shallow water because food is more abundant there (Fig. 138).

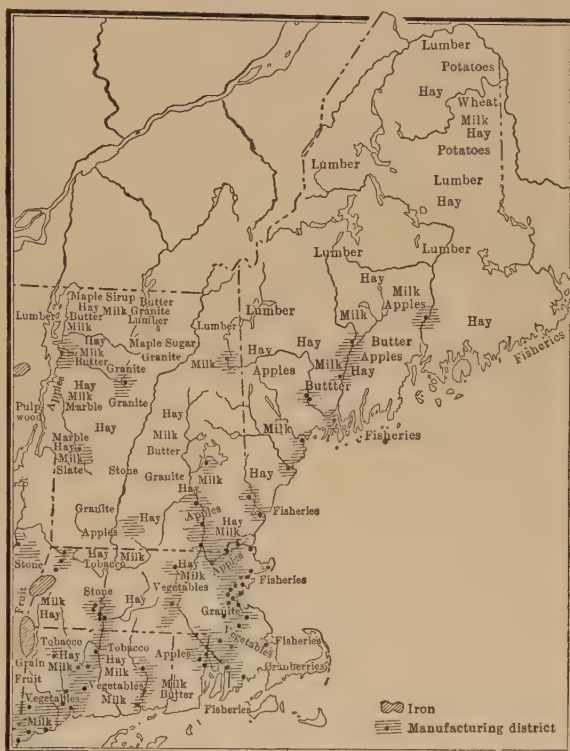
Gloucester and *Boston*, in Massachusetts are both centers for fishing.

Today Boston is one of the largest fish markets of the United States. Boston vessels as a rule go out for a short time and bring back fish to be used while fresh. The fish are at once packed in ice and shipped to other cities by fast express.

Before the days of kerosene and electricity, whale oil was burned to give light. Whalemen from New England went to all parts of the world hunting whales. This industry no longer exists, but *New Bedford* and *Nantucket* still have many reminders of this once prosperous occupation.

SOME THINGS TO LEARN

- Another rock much used in eastern cities building is red sandstone. This stone



is quarried especially in Connecticut. Connecticut and Massachusetts have a hard rock known as trap rock, that is valuable in road building. Every state is building more and more hard-surfaced roads each year, and this special kind of rock is therefore in great demand.

The value of the forests. Northern New England still has large areas of fine forests from which much lumber is cut every winter (Fig. 139). The logs are hauled to the banks of the rivers when the snow is on the ground. In the spring the logs are floated down the rivers to the mills, where they are sawed into lumber. The leading city in the lumbering business in New England is *Bangor*, Me., on the *Kennebec*, because it is a good river port and is also near the lumbering region. A great deal of the lumber now cut in New England is made into wood pulp and used for making paper, especially newspaper or print paper.



Underwood & Underwood, N. Y.

FIG. 139. A logway and sawmill in New Hampshire. The logway is the quiet body of water in which the logs are floating. How are the logs taken from the logway to the sawmill? How is the sawed lumber carried away? What is used for fuel for the power house?

68. MANUFACTURING AND COMMERCE

SOME THINGS TO LEARN

1. Why manufacturing is the leading industry.
2. The reasons why commerce is so important.
3. Where New England gets her raw materials.
4. The manufactured goods for which New England is best known.
5. Why Boston is the chief city of New England.

The importance of manufacturing. Agriculture, lumbering, mining, and fishing all furnish raw materials that can be made or manufactured into useful products. New

England people began early to build ships and to manufacture shoes, cloth, and iron goods. Today much of the raw material used in the factories is imported from other sections of the country or from abroad. Cotton is brought from the South; iron, copper, and lumber from the West and from Canada; and hides from South America. New England has to import even the coal that furnishes power for its many mills.

Manufacturing is the most important industry in New England. It is done in and around the cities that have grown up near the coast and in the river valleys, especially in the southern part of New England (Fig. 138).

New England manufactures many different kinds of goods. Those for which it is best known are, however, few in number. More cotton and woolen goods, footwear, and fine paper are manufactured in *Massachusetts* than in any other state in the Union. *Connecticut* leads in the manufacture of ammunition, brassware, and clocks, and has important silk mills. *New Hampshire* is known for its cotton goods, and *Rhode Island* for its cotton goods and jewelry. The canning of fish and berries and the making of wood pulp for paper are the leading manufactures in Maine.



FIG. 140. Airplane view of a part of Boston Harbor.

We see the Charlestown navy yard in this picture.

What kinds of boats are kept in a navy yard?

How many war craft can you count in the picture?

What does the size of the vessels suggest as to the depth of Boston Harbor?

What name is given to the platforms between the boats? What name to the places where the boats are anchored?

FIG. 141. The Connecticut River and Holyoke Range.

This is a view in southern Massachusetts.

What do you see here that might attract tourists and vacationists to this region?

What route would the railroad follow from the valley at the left to the city at the right?

What is such a break in a mountain range called?



Why there is much commerce. Of course New England must carry on a large commerce with the other states and with the rest of the world in order to sell the products from its many factories. Manufactured goods are sent by train to all parts of the United States in exchange for food, coal, iron, and other supplies. The foreign and eastwise commerce is also large. Boston is one of the leading ports of the country (Fig. 140). It has a large, safe harbor and is connected by rail with all the manufacturing towns in New England.

Portland, Me., with a large and beautiful harbor, and *Providence, R. I.*, are two of the principal commercial cities of New England.

69. WHY NEW ENGLAND IS A VACATION LAND

SOME THINGS TO LEARN

1. Why one likes to visit the seashore.
2. How the higher lands furnish recreation.
3. About some places of historic interest.
4. About some noted colleges of New England.

The need for recreation. Many people who work hard all the year take a vacation in the summer. People living in cities like New England, with its mountains, lakes, seashore, and many places of historic interest, is often

called the "Vacation Land of the East," because so many people visit it every summer.

Some recreation places. Thousands of people go to the seashore, some for only a day, others for a longer time. In summer large cities are found at many of the beaches, but in winter these are nearly deserted. Much of the coast line is occupied by summer homes or summer resorts (Fig. 143).

The wooded uplands and mountains of New England are almost as popular vacation regions as is the shore. In the higher lands far from the cities are found many large hotels; and hundreds of summer homes have been built wherever good views and good air can be found (Fig. 141).

The rivers and lakes of northern New England attract hunters and campers in the summer and autumn. Good roads and the automobile have made traveling and camping easy, and attractive camping sites are readily found. On the lakes, in the mountains, and at the seashore are summer camps for boys and girls. Every year thousands of young people come to these camps, where they learn to swim, paddle canoes, ride horseback, and engage in other sports.

Other places of special interest to visitors. New England has many places interesting to visit, because they were settled so many years



Courtesy of Boston and Maine R. R.

FIG. 143. A view of the ocean at Nahant, Mass.

The coast at Nahant is a small peninsula extending out into the ocean four miles.

Here the swell of the sea is broken up into surf by the rugged coast.

Many people have summer homes along this strip of coast.

ago. The first white people to make their home in this region were the Pilgrims, who came from England and settled at Plymouth. The settlers called the country New England, because they came from Old England.

In and about Boston are many places of interest. Here are *Faneuil Hall*, the "Cradle of Liberty," the *Old North Church*, made famous in the story of Paul Revere, and *Bunker Hill Monument*, marking the site of the battle of Bunker Hill. Close by are *Lexington* and *Concord*, towns in which the American Revolution started; not far away is *Salem*, a famous old seaport and the home of Hawthorne. These are but a few of the historic spots of New England.

Many famous authors have lived in New England. Perhaps those most beloved by children are Longfellow (Fig. 142), who wrote "*Hiawatha*" and "*The Village Blacksmith*";



FIG. 142. Longfellow's Home in Cambridge, Mass. From the front windows one looks across a park to the river. Why would such a house be a pleasant one in which to live?

Whittier, the author of "*Snowbound*" and "*The Barefoot Boy*"; Louisa M. Alcott, who wrote *Little Women* and *Little Men*, and Thomas Bailey Aldrich, who tells of his boyhood life in *The Story of a Bad Boy*.

Very early in the history of America the people of New England became interested in schools. The first college in America, now *Harvard University*, was started at *Cambridge, Mass.*, in 1636. *Yale University* was founded at *New Haven, Conn.*, in 1701. There are also many other universities and colleges for both men and women in each state.

SOME RELATED PROBLEMS

1. Why do most of the people of New England live near the coast?
2. What section is known for potato growing, and what valley for tobacco growing?
3. How are maple sugar and maple syrup made?
4. Why does not New England raise all the food needed by her people?
5. If there were no Cape Cod Canal, how would vessels go from Boston to New York?

SOME THINGS TO DO

1. Imagine yourself going for an outing into northern Maine. Use an envelope for a trunk, and put into it pictures of all the things you would need on your vacation.
2. Find in Whittier's "*Barefoot Boy*" a place which tells about a New England summer. Read Whittier's "*Snowbound*" for a description of a New England winter.

THE MIDDLE ATLANTIC STATES

STATE	ABBREVIATION	STATE	ABBREVIATION
New York.....	N. Y.	Delaware.....	Del.
Pennsylvania.....	Pa.	Maryland.....	Md.
New Jersey.....	N. J.	Virginia.....	Va.
Washington, D. C.	D. C.	.....	.....

70. WHAT THE MAP SHOWS

blems:

1. Why are the states of this region called the Middle Atlantic states? (a) Turn to the Appendix and find the areas of these states. (b) What large body of water lies eastward? (Fig. 137.) (c) How many of these states do not touch the coast?
2. Why is the coast of New Jersey a resort for people who like the ocean? (a) For what large near-by cities is this region a great playground? (b) Why is the New Jersey coast better for a summer resort than the coast of Florida?
3. Give four reasons why the Adirondacks and the Catskills are good places for recreation. (a) How far are they from the large cities? (b) How can people from the cities easily reach these mountain regions?
4. What great canal crosses New York state? (a) How has this been made more useful?
5. Give three reasons why you think New York has a better harbor than Philadelphia. (a) At the mouths of what rivers are these cities? (b) Which city is closer to the ocean? (c) Try to find three routes from each city to the West.
6. In each state find the best farming country. (a) How far is it from the coast to the mountains in New Jersey? in Virginia?

estions:

1. In what general direction do most of the rivers of this region flow?
2. Which two states are all lowlands?
3. What large lakes touch this group of states?
4. What large island belongs to New York?
5. Locate the Erie Barge Canal.
6. How far is it from the shore line to the deepest part of the ocean off New York Bay?
7. How far is it from New York City to Washington?

Essential names and places:

Study the maps, Figs. 130 and 137. Be able to point out and name the following on an outline map: all the states of this group; Allegheny Plateau; Blue Ridge, Adirondacks, Catskills; Hudson, Susquehanna, Delaware, Potomac, and James rivers; Chesapeake Bay, Delaware Bay; Lakes Erie, Ontario, and Champlain; Niagara Falls; Long Island; the cities of New York, Buffalo, Philadelphia, Pittsburgh, Baltimore, Richmond, Norfolk, Washington.

71. WHERE OUR COUNTRY BEGAN

SOME THINGS TO LEARN

1. Three important things about the nature of the Atlantic Plain; about the coast line.
2. The parts of the Appalachian Highland.
3. The names and locations of three Appalachian gateways.
4. How these gateways have been used.
5. Where pleasure resorts are found, and why they are visited.
6. The story of Niagara Falls.

The Atlantic Plain and coast. In 1607 the first white people to make permanent homes in our country settled the little village of *Jamestown* in what is now the state of Virginia. New England and the group of states from New York to Georgia contained all the early colonies. We have seen how New England has developed into a great industrial region. The *Middle Atlantic* states have also had an interesting history.

Jamestown was built in a low, flat region some distance from the sea. All along the coast and for many miles inland the country is flat or gently rolling. This region is known as the Atlantic Coastal Plain. It extends along the eastern edge of the United States, from New York to Florida. This great plain is narrow in the north but widens southward until it includes all of Florida. Such a wide plain gives room for many people to live between the sea and the mountains to the west. The soil, usually good, in places is



FIG. 144. A part of the Allegheny Plateau.

Parts of the Allegheny Plateau are fine farming areas. This is a scene in New York state.

What is to be seen in the middle of the picture?

Note the wild flowers in bloom in the field.

What kinds of slopes are devoted to farming? What kinds are covered with trees?

very rich. Here the colonists planted their crops. Of course they raised many crops to furnish food, but the chief crop was tobacco, which was to be sold in Europe. With the money secured for the exports the colonists bought manufactured articles and other things they could not produce at home.

The early settlements were made near the bays, especially *New York Bay*, *Delaware Bay*, and *Chesapeake Bay*. There are few breaks in the long Atlantic shore, and hence few harbors and bays. Such a long shore is dangerous for sailors, and all the points or capes that extend farthest into the ocean are now marked by lighthouses. *Cape Hatteras* and *Cape Fear* on the southern coast are the best known.

In the western part of the Atlantic Plain is a rolling upland known as the *Piedmont Belt*. It extends from New York City to Georgia and is a farming country, although the soils are not so good as in many other parts of the plain.

The Appalachian Highland. To the west of the low-lying Atlantic Plain and Piedmont country is the Appalachian Highland, close to the ocean in New York, but nearly two hundred miles inland in Georgia. The *Appalachian Mountains*, one of the highest ranges in the highland, reach their greatest

height and width in North Carolina. The Appalachian Highland was first called the Blue Ridge, but now we know that the *Blue Ridge* is but one of several ranges that make up the highland.

The western part of the highland lies partly in this group of states and partly in the states of the Mississippi Valley. This high, flat region is known as the *Allegheny Plateau*. Between the eastern mountain ridges and the Allegheny Plateau is a narrow lowland often called the *Great Valley*. While this is a rich farming region with many cities, the higher areas have few people (Fig. 144).

As people began to explore the country and tried to settle farther west, they had great difficulty in getting across the highland region. The best routes to follow were the river valleys, that were like gateways in a long fence.

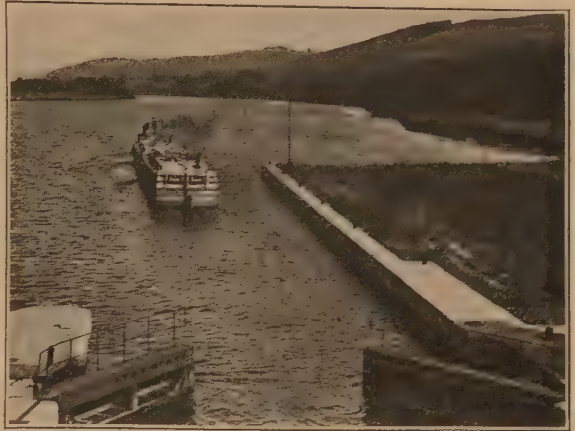
The Appalachian gates. Several streams in the northern states of this group rise west of the mountains and flow through them to the ocean. The river valleys through the mountains, or *water gaps* as they are called, furnish the best routes into the interior and were early followed by trails and roads and later by the railroads (Fig. 145).

The *Hudson Gateway*, made by the Hudson River, is the most important of these cross-



FIG. 145. The Delaware Water Gap. This is one of the great gateways through the Appalachian Highland. What is the value of such gateways? Note the railway on the right. Name three other such gateways through the Appalachian Highland. Is this a slow or a swift stream?

keys, since it offers the easiest and most direct route to the Great Lakes. The Erie Barge Canal (Fig. 146), which connects Lake Erie and the Hudson River, follows a lowland just north of the Allegheny Plateau. The Hudson River, the Barge Canal (Fig. 127), and the Great Lakes together form a waterway far into the interior of the country. The railroads that follow this lowland region are the most important roads between New York and Chicago and other western cities, because for the whole way the route is the most level. Railroads in other sections are forced to make much more of a climb to get through the highlands.



Ewing Galloway
FIG. 146. The Mohawk River used as a canal. The river has been dredged where it was shallow, and dams have been built to raise the level of the water. Locks let the boats pass from one level to another. In which direction is this boat moving? What power is moving it?

Farther south the Susquehanna River and its valley make another gateway through the highlands, known as the *Susquehanna Gateway*. This provides an open route for another railroad through the highland from Philadelphia to Pittsburgh and westward. This is a great coal and iron route, for it connects the mining areas with the coast.

Still farther south another railway passes westward from Washington and Baltimore through the *Potomac Gateway* (Fig. 147), made by the Potomac River. This route, too, is important for the transportation of coal.

Some places that attract visitors. The seaside resorts of New Jersey, in both summer

FIG. 147. The Potomac Gateway at Harpers Ferry.

The land in the lower right corner is West Virginia, on the left side of the river is Maryland, and on the right, Virginia. Through this gateway passes a railway from Chicago to Washington, and other eastern cities. Of what highland is this a part? What river made this gateway? Why is this a good place for a city to be located?



Courtesy of Baltimore & Ohio R. R. Co.



Thompson

FIG. 148. Scene at Atlantic City.

There are a number of fine beaches along the coast of New Jersey.

One of the most famous is at Atlantic City.

Notice the walk along the shore and the large hotel.

Why is this a good place for bathing?

Is the water here salt or fresh?

and winter, attract visitors from all over the United States. *Atlantic City* (Fig. 148) and *Ocean Grove* in New Jersey are the most frequented of the northern pleasure resorts, and both are easily reached from New York, Philadelphia, and other large cities in this densely populated section.

Those who like the mountains as a vacation region find many delightful sections to visit in this group of states. Perhaps the best known are the *Adirondacks* in New York state, famous as a camping and hunting region. The lakes, the streams, the forests, and the mountains make this a region of great natural beauty. So many people visit it each summer that numbers of large hotels have been built to lodge them comfortably. The pure water, the healthful air, and the outdoor life make the Adirondacks also a favorite health resort. The mountains of southern New York, New Jersey, Pennsylvania, Virginia, and North Carolina are equally beautiful, and every year are becoming better known as tourist regions.

But the best-known beauty spot in all this section is *Niagara Falls* (Fig. 149). Here the water on its way from Lake Erie to Lake Ontario divides into two wide streams around an island and leaps over a cliff more than a hundred and fifty feet in height. As the water falls it is broken into fine spray. The sun

makes rainbows in the mist, and the scene is one of great beauty. Below the falls the water flows through a deep, narrow gorge, at some places reaching the speed of an express train.

Another feature in this group of states that is of special interest is the *Natural Bridge* in Virginia. This bridge is a part of the roof of an old cave through which flowed a stream. All the rest of the roof has fallen in, leaving a great arch as a natural bridge across the bed of the little stream.

One of the most interesting places in this group of states is the ruins of the village of Jamestown. Here may be seen the old church in which was christened the first white child born in America, and other ruins also tell of those far-away days. These are all wonderfully interesting when we think of the great country of today that has grown from this small settlement in only a little more than three hundred years.

72. WHY EACH OF THESE STATES IS A FARMING STATE

SOME THINGS TO LEARN

1. Where the best farming areas are found.
2. How the climate to the north differs from that to the south.
3. The crops of the north, and why they are important.
4. Some crops of the states farther south, and why they can be produced there.



FIG. 149. A part of Niagara Falls. This portion of Niagara Falls is known as the Canadian or Horseshoe Falls. It is on the Canadian side of the river. Tell how it would feel to take a ride in the small steamboat going through the spray up close to the falling water. Notice the power house on the right where electricity is made.

Where farming is found. Farming of one kind or another is found in every state of this section, but in some sections other industries are so large that we almost forget about the farms. This is true of the northern states of the group, which are so famous for their manufacturing and commerce. Yet wherever the soil and climate are favorable and the land cannot be used to greater advantage for something else, we find farming. In the southern states agriculture is still the leading occupation. The best soils are found in parts of the Atlantic Plain and in some of the long valleys farther inland. The *Mohawk Valley* in New York was at one time a great wheat-producing area, and is still an important farming region. *Lancaster County* in east-Pennsylvania is famous for the country over its splendid crops. In the higher regions the soils usually are not so rich, but are still fertile. Most of the mountain areas are too steep for farming and are therefore devoted to forests, which also furnish products of great value.

How the climate varies from north to south. We have already learned how summers and winters in the north differ from

those in the south. As the summers are longer in the south, many crops commonly grown in that section are never planted in states farther north.

Farm products of the north. The millions of people living in the large cities of the northern states need great quantities of food, much of which must be brought from a long distance. Many kinds of food, such as milk, vegetables, and some kinds of fruit, must be fresh, and are best produced near the places where they are to be sold and used. In the northern states of this section, therefore, as in New England, dairying is important. Most of the milk is sent every day to the large cities. But some sections in these states are too far away to send fresh milk to these cities, and so the milk is made into butter and cheese, which do not need to be marketed so quickly. In many sections of New Jersey, Maryland, and Virginia truck farming, or the raising of vegetables and small fruits, is carried on. These products are marketed daily in the cities (Fig. 150).

Other crops of these states are apples, potatoes, corn, wheat, hay, and tobacco. New York is one of the leading states in the



FIG. 150. An industrial map of the Middle Atlantic states. Which states do you think lead in coal mining?

production of hay, apples, and potatoes. Pennsylvania is famous for its tobacco; New Jersey and Delaware supply great quantities of green vegetables, peaches, and berries of all kinds (Fig. 150).

73. WHY MINING IS IMPORTANT

SOME THINGS TO LEARN

1. The kinds of coal, and where found.
2. Why coal is necessary.
3. How coal is mined.
4. How gas is made.
5. About other mineral and rock products found in this group of states.
6. Why Pennsylvania is the leading mining state in this section.

Where coal is found. The Allegheny Plateau is everywhere rich in bituminous or soft coal. Soft coal is much used for fuel and in the smelting of iron. Pennsylvania is the leading state of the east in the production of soft coal. Farther east in this state is mined most of the anthracite or hard coal used in the United States. In the eastern states hard coal is used much more than soft coal for heating and for power. *Pennsylvania* produces practically all the

hard coal and a large part of the soft coal that is mined in this country (Fig. 150).

How coal is mined. Coal is found in seams or layers, often deep down in the earth. These layers are anywhere from a few inches to several feet in thickness.

Sometimes rivers cut deep valleys into the rocks. Then we may see the layers of coal between the layers of rock without going down into the earth. Perhaps several of these layers, or coal seams, may be seen in the same valley.

It is easy to get at the coal when it is found at the surface in this way. The miners dig back into the valley side or bank, taking out the coal as they go.

To reach most of the coal layers, however, it is necessary to dig deep holes, called shafts, into the earth.

What coal is used for. Coal is one of the most important fuels, and hence coal mining is a very needful occupation. Everyone is helped by the coal mines. Coal is used for heating houses and for cooking. It produces power to make electricity, which furnishes light and power for business, and light and sometimes heat for homes. Most railway locomotives and engines in ships are supplied with power from the coal they burn, and a large part of the manufacturing in the United States is done with power furnished by coal.

Gas, which is often used for cooking and lighting, is made by baking coal in large closed ovens. After the gas has been taken from it the coal is called coke. This is a valuable fuel for smelting iron ore.

Other earth products. Pennsylvania also produces much petroleum and natural gas. Natural gas is used as a fuel in making glass, and we get gasoline, kerosene, dyes and many other valuable products from petroleum. This state also produces some iron and at one time led the country in iron mining. Today most of the iron ore used

the great steel plants of Pennsylvania and from states farther west.

Another valuable rock product found in the Atlantic Plain is clay for pottery and brick. Limestone of several kinds are quarried in the mountain and plateau regions.

Although minerals are found in all the states of this area, Pennsylvania with hard and soft coal, iron, petroleum, and natural gas is the leading mining state in this region (Fig. 150).

SOME RELATED PROBLEMS

Why are many cities and towns in Virginia named for places in England?

Why is truck farming important in New Jersey and Virginia?

Why were most of the early settlements made near the coast or on the river banks?

Where would lighthouses be needed in this group of states?

Why is the western side of Niagara Falls called the Canadian Falls?

SOME THINGS TO DO

Bring in small samples of hard and soft coal and compare them. If coal is found near where you live, compare it with the samples.

Look over the advertisements of vacation trips in different magazines, folders, and papers, and cut out any which tell of this section of the United States.

74. PRODUCTS OF THE SEA AND FOREST

SOME THINGS TO LEARN

Why oysters thrive in Chesapeake Bay.

Why forests in this region are important.

Where oysters grow. The most important oyster fisheries in the United States are to be found in this group of states. Along the coast there are a number of bays into which fresh water flows from large rivers. Because of this the water is brackish, that is, not so salty as sea water. Oysters grow best in brackish water which is warm and

shallow. Chesapeake Bay furnishes all these conditions. Oysters are harvested in the fall and winter and sent to all parts of the country. *Baltimore* is the leading market for both fresh and canned oysters.

Products of the forest. All the higher regions are covered with forests, and forests are also found wherever the land is not cultivated or used for building. The forests of the Adirondacks furnish wood pulp, from which paper is made. The forests of the Appalachian Highland supply hardwood for making furniture.

75. MANUFACTURING AND COMMERCE

SOME THINGS TO LEARN

1. In which states manufacturing is a leading occupation.
2. The names of the most important manufactured articles.
3. Why commerce is so important in this region.

Manufacturing in this section. Manufacturing is the leading industry in the northern states of this section. The ten northeastern states, with Ohio, Indiana, and Illinois, make up the manufacturing center of the country, as the great number of large cities naturally suggests. The coal and iron of Pennsylvania long made it the leading state in steel making. Today most of the iron ore for steel making is brought from Minnesota and is manufactured on the southern shores of Lake Michigan and Lake Erie. Every large city owes its growth partly to the development of factories which give work to many people. New York (Fig. 151) and Philadelphia (Fig. 154) are the largest manufacturing cities, but every large city on the map (Fig. 137) is engaged in manufacturing. The products from the thousands of mills and factories in this region include almost every kind of manufactured article known. Woolens, clothing, silk goods, books, sugar, electrical supplies, railway



Fairchild Aerial Surveys, Inc., New York City

FIG. 151. An airplane view of a section of New York City. In the many high buildings crowded closely together, much business is carried on. New York Harbor does not show here. From all parts of the world ships bring trade to this great city. Can you count the stories in some of the highest buildings?

cars, and locomotives are a few of the products that are most useful and important.

The importance of commerce. The states in this group produce more manufactured goods than they can use. Much of what is manufactured is exchanged with the rest of the country for food and factory supplies. Thus, a large trade is carried on with the rest of the United States. Then again, these states are at the eastern door of the continent. Most of the trade with Europe, Africa, and South America must pass through the Atlantic ports. Goods from the interior are sent to the coast to be shipped abroad, and imports from foreign countries also come largely through the Atlantic ports. Because

of this, commerce is an important business in and around the larger ports, and thousands of men and women are helping to carry it on.

76. ONE OF THE WORLD'S GREATEST CITIES

SOME THINGS TO LEARN

1. The advantages of New York City as a seaport.
2. Why life in a large city differs so much from life in the country or a small town.
3. Why there is so much travel daily in New York City. How this travel is cared for.

Why New York City has grown. *New York City is one of the largest cities in the world. In a little over a century the number of it*

has grown from about sixty thousand to a million. Today it is one of the greatest manufacturing and commercial cities of the world. There are many reasons for its rapid growth, and we shall learn about some of them. In the first place, the city has the best location in North America for foreign commerce, nearly one-half of our imports and exports pass through the port of New York. Its harbor is one of the best in the United States, and it is large enough and deep enough for the biggest vessels in the world to enter. Because the harbor has a good entrance, ships can easily come and go between its surface and the deep sea (Fig. 105).

In addition, New York has better railroad connections to the large cities of the west than any other city. Goods can be quickly and easily moved to and from this port through the Hudson and Mohawk valleys by rail all year and by water most of the year. A city is only a few hours by rail or ship from the factories of New England. These are some of the reasons why New York is a great commercial center (Fig. 151).

The needs of a great city. Every large city like New York must provide many services for its people to assist them in their work and their play. It takes an enormous amount of food to feed the people every day. All of this must be brought quickly to markets where families can buy it. There must be many large stores, many schools and places of amusement, many parks and playgrounds, as well as libraries, banks, and other conveniences. The more business a city has and the better it can care for the people in it, the more people will come to live and live there. Thus a large city tends to grow larger all the time. But all the people who work in a city like New York do not live in the city. Many of them live in other towns near by, or in the country.

In a large city, therefore, the problem of bringing people quickly from place to place

is a serious one. The streets are too crowded for quick travel, and can be used only for short distances. Elevated roads above the streets and tunnels or subways beneath them are necessary to help move the people quickly.

People in New York City, then, can travel on three levels—the surface, above the surface, and beneath the surface. Indeed, in one section of the city they can travel on four levels, because one subway goes under another. Perhaps some time, and it may be soon, the air may be as busy as the streets are now.

77. WASHINGTON: THE CAPITAL CITY OF THE NATION

SOME THINGS TO LEARN

1. Where and how Washington was located.
2. Why Washington is the most interesting city in the country.
3. Some places worth visiting in and about Washington.

How Washington was located. Every large city is an interesting place to visit, and perhaps no city is more interesting to everyone than *Washington*, the capital of our country. The city of Washington is in the *District of Columbia* and on the east side of the Potomac River, more than a hundred and fifty miles from the Atlantic. It was planned by a French engineer and named in honor of our first president (Figs. 91, 92).

When our national government set apart the District of Columbia for the *capital city* no one thought the United States would ever extend beyond the Mississippi, much less to the Pacific coast. So a site was chosen for the city which could be reached easily from all parts of the country as it was then.

The seat of our national government. The president of the United States lives in Washington. His home is known as the *White House* (Fig. 152). The building in which the laws are made by Congress is called the *capitol* (Fig. 32). There are many other government buildings in Washington which



Courtesy of U. S. Army Air Service

FIG. 152. An airplane view of the White House.

This is the home of the president of the United States.

Who lives in this house now?

To whom does the White House belong?

The beautiful grounds in the center of the picture are on the south side of the White House.

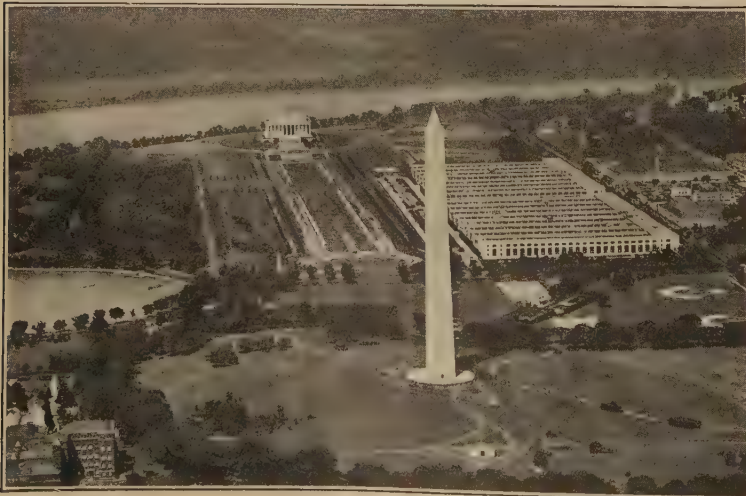
The State, War, and Navy building is seen at the left.

every visitor should see. The Library of Congress is a beautiful building containing the largest library in the country; the National Museum has many fine exhibits of Indian life which illustrate the early history of the country. In the State, War, and Navy building is carried on much of the business of our government with other nations of the world.

Washington is almost like a little world in itself, for here live men from all over the world, each sent to the United States to represent his government in its business with our government. They make us feel that, after all, the world is not really so very large when men from all parts of it can meet to do business with one another.

Other places of interest. Washington is a beautiful city and was planned so that it could be made more attractive as it grew in size. The streets are broad and lined with trees, and there are many parks (Fig. 91). The streets are not all laid out in squares, as they are in many cities. Some, like the spokes of a wheel, radiate from little parks which are the hub of the wheel. In many of these small parks are statues of famous men who have rendered great service to our country.

The *Washington Monument* (Fig. 153) is of special interest. It was built in memory of George Washington, our first president, who selected the site for our capital city. The monument is constructed of stone and is 55



Courtesy of U. S. Army Air Service

FIG. 153. Washington Monument and Lincoln Memorial.

Study the map of a small part of Washington, shown in Fig. 92.

What direction is Washington Monument from the Capitol? How far?

Imagine yourself at the top of the monument.

Looking in different directions, tell about some of the things you could see.



Aero Service Corporation, Philadelphia

154. An airplane view of Philadelphia. Philadelphia has many high buildings too, but it is not as crowded as New York City. What river flows through Philadelphia into Delaware Bay? Why is it called the "Quaker City"? Why are there so many tall buildings near the center of the city?

high. Inside is an elevator in which one can ride to the top. From this great height one can see the whole city and surrounding country spread out in a fine view. To the west and close to the Potomac stands the Lincoln Memorial (Fig. 153), one of the most beautiful features in a city of beauty.

On the south bank of the Potomac not far from the city is Mount Vernon, a dignified and charming old southern mansion which was the home of George Washington. The grounds are just as they were when he was alive. Mount Vernon is one of the most historic places in the country.

78. OTHER LEADING CITIES

SOME THINGS TO LEARN

Four facts about Philadelphia; three about Pittsburgh; two about Baltimore. Why Buffalo is a trade center. The industries that have made three other cities well known.

The Quaker City. Philadelphia (Fig. 154), founded by William Penn, a Quaker from England, is often called the "Quaker City." It is located on the Delaware River about a hundred miles from the Atlantic. It is *third in size* among the cities of the United States and ranks high in the manufacture of hosiery, carpets, leather, and locomotives.

It was in Independence Hall in Philadelphia that the Declaration of Independence was signed, July 4, 1776.

Other cities of this area. Pittsburgh is the leading iron- and steel-making city of western Pennsylvania. Its location on the Ohio close to coal and iron mines has made it a great iron center. It is the second city of the state.

Baltimore is a large and thriving business city at the head of Chesapeake Bay, between Washington and Philadelphia. One of the interesting industries of the city is the canning



FIG. 155. A grain elevator at Buffalo.

What two water routes meet at Buffalo?

Why does the city need large storage elevators for grain?

This is a lake boat. Can you tell if the boat is loading or unloading grain?

Why is much grain shipped by water instead of by rail?

Do boats of this kind carry passengers?

of oysters, which are found in great numbers in Chesapeake Bay (Fig. 150).

Among the cities that have grown largely because of fine water power are *Troy*, N. Y., and *Paterson*, N. J. Troy is known for its collar and cuff factories, and Paterson is one of the chief silk-manufacturing cities of the country.

At the eastern end of Lake Erie and at the western end of the Erie Barge Canal is *Buffalo*, the second city of New York. Its position makes it a great trade and manufacturing center. Much grain from the West passes through Buffalo, and in and around the city are many large grain elevators (Fig. 155) and steel mills.

Schenectady, N. Y., is noted for its electrical works and for its wireless station, one of the most powerful in the country.

Scattered throughout New York and Pennsylvania are many other large and flourishing cities, all of which are manufacturing and trade centers.

SOME RELATED PROBLEMS

1. Why does the northern part of this region have more large cities than the southern part?

2. Why is our capital city so far from the center of the country?
3. Why is paper manufacturing so important in the vicinity of the Adirondacks?
4. Why did the Pennsylvania Railroad Company build a tunnel under the Hudson at New York City? In what other way do passengers get across the river here?

SOME THINGS TO DO

1. The population of New York City at each census since 1850 was: 515,547 in 1850, 813,669 in 1860, 942,292 in 1870, 1,206,299 in 1880, 1,515,301 in 1890, 3,437,202 in 1900, 4,766,883 in 1910, and 5,620,048 in 1920. Letting one inch represent one million people, draw lines showing the population at each census.
2. Make a list of the interesting things you would see on a railway trip in January from New York to Jacksonville.
3. If you live in a city, go to a grocery and find out what vegetables are shipped in from farther south.
4. See how many interesting pictures of the Middle Atlantic states you can find. Use magazines, newspapers, and railroad folders. Have the pupils in the class arrange the pictures by states.

THE SOUTH ATLANTIC AND SOUTH CENTRAL STATES

STATE	ABBREVIATION	STATE	ABBREVIATION
Maryland.....	Md.	Alabama.....	Ala.
Virginia.....	Va.	Mississippi.....	Miss.
North Carolina.....	N. C.	Louisiana.....	La.
South Carolina.....	S. C.	Texas.....	Tex.
Georgia.....	Ga.	Arkansas.....	Ark.
Florida.....	Fla.	Oklahoma.....	Okla.
Tennessee.....	Tenn.	District of Columbia	D. C.

79. WHAT THE MAPS SHOW US

Problems:

1. What occupations do you think are best suited to the different parts of this section? (a) What kind of work is likely to be done on the plains where there is plenty of rainfall? Where are such areas? (Figs. 132, 156.) (b) What part of the plains is too dry for forests? What vegetation grows naturally in such areas? (c) What occupations would one expect to find in these areas? what ones on the forested parts of the plains and highlands? (d) What crops are raised on the coastal plain areas? on the Mississippi River plain? (e) Study the industrial map to find out if you are correct (Fig. 159).
2. How do the maps help in showing why few people live in western Texas and Oklahoma? (a) Note the few cities here as compared with the eastern parts of these states. (b) What does the rainfall map show? (c) How does the railroad map indicate a lack of products to be shipped? (d) What occupation is important, as shown by the products map?
3. How does the map help to show you that the area included in this group of states is very large? (a) Make a square or rectangle that will just cover the New England states (Fig. 133) and see if it will cover this group of states. (b) Which is the largest state in this group? (c) Make a square or an oblong to cover this group (Fig. 133) and see how it compares with the Middle Atlantic states.
4. Trace a land and a water route from New York City to New Orleans and name the large cities at which you might stop on these routes.

Questions:

1. Which states of this group do not touch the Gulf of Mexico?
2. Which states are drained wholly by the Mississippi River and its tributaries? Which rivers drain into the Atlantic?
3. What country is southwest of this group of states? What river serves to form part of the national boundary?
4. About how far is it from New Orleans to Chicago? from New Orleans to El Paso, Tex.? from Chicago to St. Petersburg, Fla.?
5. How long would it take to make each journey in a train, at the rate of thirty miles an hour?
6. What highland extends into the western part of Texas?
7. Can you suggest why the rivers in western Texas and Oklahoma have few tributaries?
8. Locate six coast cities and two river ports.

Essential names and places:

Study the maps, Figs. 114, 130, and 156. Be able to locate and name the following on an unlettered map: Appalachian Highland, Great Smoky Mountains, Atlantic Coastal Plain, Gulf Coastal Plain, Cumberland Plateau, Ozark Plateau; Mississippi, Red, Arkansas, Tennessee, Cumberland, and Savannah rivers; all the states; the cities of New Orleans, Galveston, Mobile, Birmingham, Savannah, Atlanta, Jacksonville, Key West, Memphis, Houston, Fort Worth, Chattanooga, Nashville, and Knoxville.

80. WHY THIS GROUP OF STATES IS DEVELOPING RAPIDLY

SOME THINGS TO LEARN

1. The nature of the surface of most of this region.
2. The names of the highland areas.
3. Where levees are made, and what they are for.
4. About the surface features of the Great Plains.
5. The value of the Mississippi River as a waterway.
6. Why the western rivers of the plains area sometimes dry up.

The surface of the plains area. This group of states is often spoken of as "the South."

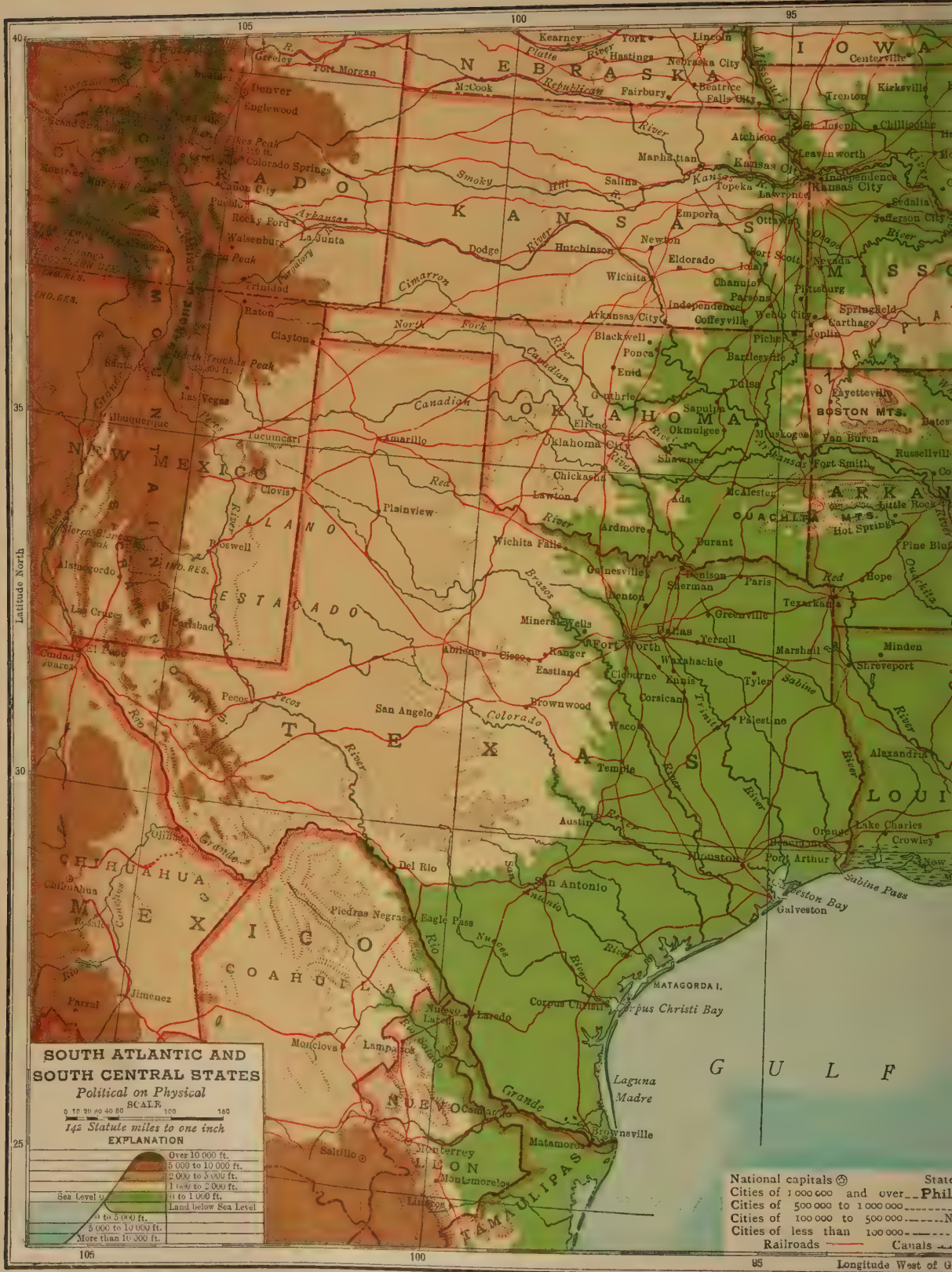


FIG. 156. A Map of the So



and South Central States



U. S. Official Photograph

FIG. 157. A levee along the lower Mississippi River. Notice how the land slopes away from the river. See the bags of soil that are used to build up a low place in the bank. Why do houses built here need to be set high above the land?

The people of the northern states used to think of the South as a land of cotton and sugar cane, neither of which will grow in the North. We shall find that these southern states produce many other crops besides these two warm-climate products. But both cotton and sugar cane are grown abundantly, which shows that the climate and soil are favorable for them. Let us see what the surface, the soil, and the climate are, and then perhaps we shall better understand why the South is such a rich agricultural section with many growing cities. Except for the Appalachian Highland in the northeast and the highlands to the west in Missouri and Arkansas, the southern states are for the most part in a low-lying plain. The plain bordering the Gulf of Mexico and the Atlantic Ocean stretches away as far as one can see, and in many sections is as flat as a floor. This plains area extends from Virginia southwestward into Mexico (Fig. 156).

A portion of this flat area is the alluvial plain through which the Mississippi River winds on its way to the Gulf. This plain has been built by the river itself. It is made up of the fine soil material which the river dropped in time of flood when the water covered the land far beyond the river's banks. The highest part of the plain is next to the river and here high banks have been built up. In some places they are so high that one may walk on them and look down upon the houses. These high banks are called *levees* (Fig. 157). They have been built to prevent the river when flooded from flowing over the land and causing damage to crops and perhaps loss of life. But, in spite of all that man can do, the river sometimes breaks through the levees during the flood time of early summer. It costs a great deal each year to keep the levees along the Mississippi River in repair, but it certainly pays to do this.

The highland areas. In the eastern part Tennessee is the high *Cumberland Plateau* (Fig. 130), and between this state and North Carolina are ranges of the Appalachian mountains. Between the plateau and the mountains lies the rich, narrow valley of East Tennessee in which are several growing cities. This valley, deep set between the bordering higher lands, is a natural railroad route connecting the cities of the North and East with those of the South (Fig. 158).

In the southern states the Appalachian mountains are higher than in the states farther north, and routes across them are few. Hence trade in this section has largely to be carried on around the mountains, or up and down the valleys lying between the ranges, rather than across them (Fig. 156).

The Ozark Plateau. In Missouri and extending into Oklahoma and Arkansas is the *Ozark Plateau* (Fig. 156). This region, like most of the eastern highlands, is thinly populated, and the industries are mainly agriculture and mining.

The Great Plains. Oklahoma and western Texas lie in the *Great Plains* (Fig. 130). To the west the Great Plains increase in height and the places are very rough. This region, however, is best described as an extensive grassland, where cattle raising is the natural

industry. This is the section which has been made famous by the stories of the cowboys who once followed the herds of cattle over the plains almost to the northern boundary of the United States.

The rivers of this region. Much of the Great Plains area of the *South Central* states is drained by the Mississippi and its tributaries. Before the days of railroads this river was one of the busiest streams in the world. Now it is not used much for trade except in its lower course, where cotton, coal, and lumber are shipped to market (Fig. 125). But the river is useful in many other ways. It carries to the Gulf the surplus rain that falls in the central portion of the United States. This is important work, for land is of little use unless it is well drained.

Many of the other rivers of the South are short and flow directly into the Gulf of Mexico or the Atlantic Ocean. In some places where they empty into small bays, as they do in both Mississippi and Alabama, cities have grown up as ports. Except for New Orleans (Fig. 165), a hundred miles up the Mississippi, and Savannah, the ports are all bay ports. In the western section the rivers are not much used for travel because there is so little rainfall that in summer the streams usually dry up. The rivers of the

FIG. 158. Tennessee River and Williams Island.

This is a view in the beautiful valley of East Tennessee.

In this valley are some rich farm lands and some valuable forests.

Notice the city in the distance. Why would people working in the city like to spend the summer months high up on the near-by mountains?



Courtesy of Chamber of Commerce, Chattanooga

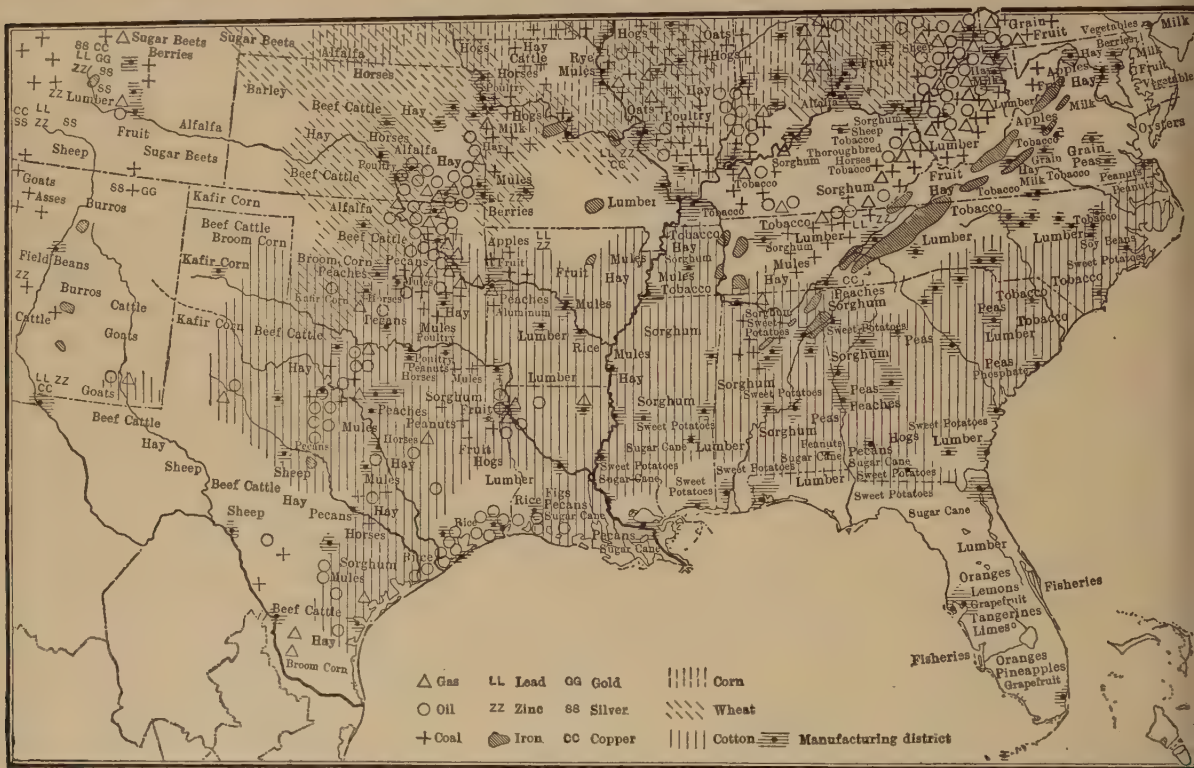


FIG. 159. An industrial map of the South Atlantic and South Central states. In what state does the wheat area overlap the cotton belt? Texas, Oklahoma, Kentucky, Tennessee, and North Carolina, outside the Corn Belt, also raise corn in increasing quantities.

Atlantic Coastal Plain are generally short. The courses of those that cross the Piedmont Belt are broken by short falls.

The highland areas are forested, and the Great Plains are given over largely to grazing. The best sections for agriculture and for the development of cities are in the fertile plains and river valleys (Fig. 159).

81. WHY AGRICULTURE IS THE LEADING INDUSTRY

SOME THINGS TO LEARN

1. How the rainfall varies from east to west.
2. Why this is a great cotton region.
3. Why sugar cane can be grown here.
4. Why the Great Plains area is especially suited to grazing.
5. Why the growing of rice has increased.
6. Why truck farming is such a flourishing occupation.

The soil and climate. Crops cannot grow unless the soil and the climate are favorable.

Nearly everywhere on the plains bordering the Atlantic coast, the Mississippi River, and the Gulf, the soil is rich and productive, and these sections are among the richest agricultural areas of our country. Some of the river valleys in the Great Plains are very fertile and even some of the uplands can be planted with profit, but in the western portion there is not enough rainfall for the successful growing of crops. The valley of East Tennessee is another rich farming section, because the decayed rocks of that region make excellent soils. The highlands are usually covered with forests. Where not forested, these areas are used as pasture, and here farming consists chiefly in raising crops for home use.

This group of states has a warm, moist climate except on the highlands and in the western section. In the highlands it is always cool and comfortable at night, even though the day has been unusually warm.

he mountainous section of Western North Carolina is noted both as a summer and as winter resort.

The western part of the Gulf Coastal plain region has a very short cold season; southern Louisiana and Texas are both favorable for raising sugar cane and rice, which require a long, warm growing season, abundant sunshine, and plenty of moisture. Farther west is the dry grassland area which is a grazing region. Southwestern Texas is extremely dry, with little vegetation.

Florida is so far south that it has a warm winter climate. It is rarely very cold, and snow is almost unknown. Hence many people who want to escape from the cold in the North spend their winters in Florida. There they can live much of the time out of doors and enjoy warm-weather sports and games.

Why a good cotton region. The southern states produce more cotton than any other region in the world, because all conditions here favor the growing of this crop.

Cotton grows best where there is a long warm season with sufficient rainfall during the summer, and with little in the autumn, or picking season. It can be grown on many kinds of soil, but thrives best on the rich alluvial soil of the river valleys and on the lowlands near the sea (Fig. 159). A cotton field is a beautiful sight when the cotton is in bloom or when it is about ready to be picked (Fig. 160). There must be plenty of cheap labor to pick the cotton, for most of the picking is done by hand. It is best for the crop to be grown near ports, for cotton is most easily shipped by water (Figs. 161, 165).

All these conditions are found in our southern states, and especially in Alabama and Georgia, in the lower Mississippi Valley, and in eastern Texas.

When the cotton is picked it is not yet ready to be pressed into bales for shipping to the mills. First the seeds must be separated from the fiber to which they cling.



Underwood & Underwood, N. Y.

FIG. 160. Picking cotton. This is a large cotton field in Georgia. Why does the cotton have to be picked by hand? Could machinery easily be used here for cultivating the land? What is done with the cotton after it is picked from the boll? What do you consider disagreeable about cotton picking?

In the early days of the United States this work was all done by hand. But in the year 1793 Eli Whitney invented a machine called a cotton gin which combs out the seeds from the fibers. With this machine it was possible to produce cotton much more cheaply, and with the help of the cotton gin the South soon became the leading cotton region in the world.

Once the cotton seeds were allowed to go to waste. Now they are taken to mills and ground like grain, and from them we get an oil which can be used for cooking and many other purposes. The cottonseed meal is used as a stock food and for a fertilizer.

In many parts of the South the farmers have for many years grown so much cotton that they have neglected other crops, and have not grown enough food for home use. If at any time the cotton crop was poor, then their year's work was a failure because they had nothing else to sell. In recent years the crops grown for food have greatly increased.

Year after year cotton growers have seen their growing cotton spoiled by two insects, the boll weevil and the boll worm. The boll weevil works within the bud and the pod, or boll, and the boll worm bores into the



Underwood & Underwood, N. Y.
FIG. 161. A cotton-loading station. The cotton is being shipped in bales to manufacturing centers.

growing cotton boll. Both these insects injure the fibers and hence do an enormous amount of damage. Because of this many farmers have found it profitable to raise other crops in addition to cotton. But cotton is still, and probably long will be, the leading crop in the "Sunny South."

Texas far exceeds any other state in the production of cotton.

Sugar cane another leading crop. Another crop that requires a rich soil, plenty of moisture, and a long, warm, growing season is sugar cane, from which sugar and molasses are made. Sugar cane usually has been known as a Louisiana crop, since it grew well on the fine soils of the Mississippi delta. But now, sugar cane for sirup is grown in Texas, Florida, Alabama, Mississippi, and Georgia. The American people, however, use much more sugar than can be produced at home,

and large quantities, therefore, have to be imported from other parts of the world, especially from Cuba and Hawaii.

Other farm crops. Both Virginia and North Carolina are known as tobacco-growing states. Virginia also raises many peanuts (Fig. 162), now so much used for oil and for peanut butter. Another well-known crop that cannot be grown extensively in the fields of the North is the sweet potato. Georgia and North Carolina grow and export large quantities. Rice is another crop that thrives best in a warm and moist climate where the soil is rich. As the rice plant requires a great deal of water while growing, it was at first thought that rice could be raised only on marsh land which can easily be flooded and then drained (Fig. 163). Now upland rice is grown on many higher-level tracts where the flooding is done by irrigation. Rice had been grown for a long time in the southern states, but it did not become an important crop there until after machinery was invented to cultivate the rice and to thresh it. Now one man with machinery can produce as much rice as forty men once could by hand. Each year we use more and more rice, and this section now raises most of what we need. Practically all of this grain is grown in Louisiana, Texas, and Arkansas, although rice is an important crop of the warm, moist lowlands from North Carolina southward.

Many of the central portions of Texas and Oklahoma are fitted especially for grain growing. Wheat is grown in Oklahoma, Texas, and Tennessee. Corn, which grows in every state in the Union, is also an important crop on many southern farms and is grown in large quantities in Texas and Oklahoma.

In the southern states on the Atlantic coast, as in all the South, there are few large cities. Only about one-tenth of the people live in cities and towns. Because of this,

most of the people in these states make a living from farming, raising not only cotton, sweet potatoes, and peanuts, but such crops as hay, wheat, corn, and oats which are needed in all places where farm animals must be fed.

Owing to the fact that spring comes early, vegetables and strawberries and other small fruits are grown in all parts of the South and are sold in the northern cities before home-grown truck crops are ready for market. In many sections of the South the season is so long that a second crop can be grown on the land after the early crops are harvested.

In Florida it is so warm throughout the year that many of the crops grown there are those of the Hot Belt. So Florida is different from all the other states of the South because of its crops of oranges, grapefruit, and pineapples. It is second to California in the raising of oranges, and is the only state that produces pineapples. Florida grapefruit is famed for its quality (Fig. 159).

Every year agriculture as an industry is increasing in the South, which, next to the North Central states, is the leading agricultural area of the country.

Where grazing is the leading industry. In western Texas and Oklahoma the winter season is very dry, and in summer there is only a moderate rainfall. The grass which grows early in summer, when it is moist, dries into hay later in summer and furnishes an excellent food for stock during the rest of the year. Stock raising, therefore, has long been a leading industry in this section (Fig. 159).

For many years after white men first settled in Oklahoma and Texas, cattle roamed freely over the great grassland areas. They were cared for by cowboys and ranchmen who once or twice a year had a round-up of the cattle in order to brand the calves with the owner's mark and to identify stray cattle and return them to their owners.

But in recent years the methods of stock raising have changed. Much of the land



Keystone View Co., Inc.

FIG. 162. Peanut vines. Peanuts, sometimes called ground nuts, are an important crop in parts of the South. Why is ground nuts a good name? Mention several uses of peanuts.

has been fenced, and the cattle receive better care. The day of the cowboy who herded his cattle anywhere on the plains is past. Wherever the soil and climate are favorable, grass and other fodder are grown to feed the stock. Texas is today the leading state in numbers of cattle, sheep, and mules, as it is also in the value of all farm crops. Most of the cattle of this region are marketed in Kansas City, St. Louis, or Chicago. Some, however, are sent to the eastern part of the United States and even to Europe.



U. S. Dept. of Agriculture

FIG. 163. A rice field in Louisiana. Rice is a water-loving plant. On what kind of land does rice grow best? What are the ditches for? How is rice prepared for food?



Courtesy of Chamber of Commerce, Tulsa

FIG. 164. A view of an oil field. This picture was taken near Tulsa, Oklahoma. This section of the country produces millions of barrels of oil each year. Did you ever see the oil tanks used by the railroads to carry oil?

82. OTHER OCCUPATIONS

SOME THINGS TO LEARN

1. Where coal, iron, and oil are found.
2. About six manufactured products of the South.
3. In what ways the forests are important.

Products of the earth. A country rich in coal and iron is a favored country, for, with coal, the iron may be made into steel, and steel is daily becoming more useful. In certain parts of the South both of these valuable minerals are found. Alabama ranks third among the states in the amount of iron ore mined and sixth in the production of coal. Coal is mined also in Tennessee, Oklahoma, Arkansas, and Texas.

Another earth product which becomes more important each year is petroleum. Some oil is used for power by steamships and railroads, for heating houses and buildings, but far greater quantities are refined into kerosene, gasoline and other useful products. Gasoline is the fuel used in automobiles and gas engines, both of which are increasing in number each year in all parts of the country. California, Oklahoma, and Texas are the greatest oil producing states.

Phosphate rock, which is used as fertilizer, is mined extensively in the states bordering the Atlantic Ocean.

The products of the mills. Manufacturing is increasing in this group of states. Only a few years ago no cotton was woven in the South. Today many cities, especially in South Carolina and Georgia, have flourishing cotton mills which use over half the cotton raised in these two states. The cotton goods made in the South are not like those made in the northern mills. Much cotton, however, is sent to other states and to other countries to be made into cotton goods of all kinds. Among other manufactures in this group of states are the refining of sugar in Louisiana and the making of coke from coal in Alabama. Do you remember what we learned about coke?

A large quantity of steel is made in the Birmingham district of Alabama, and in a number of southern cities finished lumber, furniture, and tobacco products are manufactured.

The importance of the forests. In the southern states there are three types of trees from which we get valuable lumber. The cypress grows in the swampy lowlands. Cypress lumber is used especially in making water tanks and in places where wood must be wet a great deal.

The long-leaf pine grows best on the sandy plains. From this tree we get pine tar,

urpentine, and lumber which is exported in large quantities for building purposes.

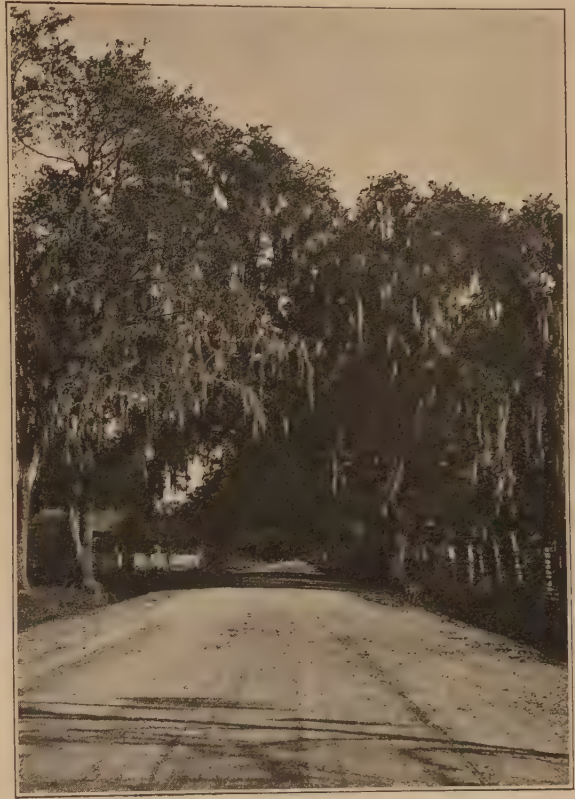
Great forests of oak, ash, and hickory are found in all the highland regions and in portions of the Mississippi Valley (Fig. 166). The higher mountains of North Carolina, especially, are largely covered with forests, and the national government is now laying out great forest reserves here, so that these beautiful and valuable forests may not be destroyed. The hardwoods of this section are used in the making of furniture, tools, and farm implements, and for the interior finish in buildings.

83. LEADING CITIES OF THE SOUTH

SOME THINGS TO LEARN

1. Why New Orleans is an important city.
2. Three reasons for the growth of Galveston.
3. How near-by products and raw materials have helped to make other large cities.

The "Crescent City." *New Orleans* is built in a great bend of the Mississippi River about one hundred miles from the Gulf of Mexico. The bend is shaped like a new moon or crescent. For this reason New Orleans is called the "Crescent City." The city has about nine miles of water



Courtesy of U. S. Bureau of Public Roads

FIG. 166. A national highway in Louisiana. Hanging from the oak trees is the beautiful Spanish moss.

front along the river. It has spread beyond the area within the bend and now covers much more territory (Fig. 165).

FIG. 165. A section of New Orleans.

Here are shown a public warehouse for cotton and a grain elevator.

Grain and cotton are brought to New Orleans both by rail and by river boat.

What river is seen on the right margin in the picture?

Why are the large steamboats lying alongside the wharf?

Trace the route of a steamboat loaded with cotton or sugar from New Orleans to Boston.



Courtesy of Chamber of Commerce, New Orleans



Courtesy of Chamber of Commerce, Birmingham

FIG. 167. An airplane view at Birmingham, Alabama. This picture shows some of the many factories and industrial plants which help to make this city one of the great manufacturing centers of the South. At the right are blast furnaces.

New Orleans is the leading city of the South for both ocean commerce and trade with the interior of the country. It can be reached by the largest ocean-going vessels (Fig. 165). As our trade with South America develops, the commerce of New Orleans will increase. As river transportation grows, this city will become of greater importance, for all the vast region drained by the Mississippi and its tributaries can easily send products to New Orleans for shipment to foreign countries.

The greatest cotton port. *Galveston*, which is built on an island, is one of the large cities of Texas and the greatest cotton port in the world. Most of this cotton comes from Texas and Oklahoma. Large quantities of grain and meat are also shipped from this port.

The city is connected with the mainland by a long, wide bridge called "The Causeway."

On this bridge are sidewalks, a public highway, street-car tracks, and several railways.

Sometimes destructive storms sweep in from the Gulf of Mexico and do a great deal of damage along the coast. To protect *Galveston*, which has suffered more than once from these storms, a great sea wall five miles long and seventeen feet high has been constructed on the seaward side.

Other important cities. *Birmingham*, Ala. (Fig. 167), is called the "Pittsburgh of the South" because it is the seat of a great iron industry. *Chattanooga*, Tenn., also has large iron works. A leading product of *Knoxville*, Tenn., is marble, but iron, copper, zinc, and aluminum products are made there, too.

Memphis, Tenn., is one of the great lumber markets of the country, and *New Orleans*, *Shreveport*, and *Gulfport* in Louisiana are also lumber centers. *Fort Worth*, Tex., and

Oklahoma City, Okla., are the leading meat-packing cities because they are not only near the great cattle ranges but near a great corn-producing region where cattle may be fattened. *Houston*, Tex., and *Mobile*, Ala., are important cotton markets. *Little Rock*, the capital of Arkansas and the largest city in the state, is a center for the manufacture and sale of cottonseed products and lumber.

In the group usually known as the *South Atlantic* states *Atlanta*, Ga., is the largest city south of Baltimore. Its position has made it a great railway center and a busy manufacturing city. *Richmond*, Va., is one of the greatest tobacco markets in the country, and *Norfolk* is famous as a coal port and for its navy yard. *Wilmington*, N. C., *Charleston*, S. C., *Savannah*, Ga., and *Tampa* and *Pensacola*, Fla., are the leading ports of the South Atlantic states. *Tampa*, because of its good harbor, has a large trade with the West Indies. *Jacksonville*, Fla., is a shipping point for oranges, and is also a noted winter resort.

84. FEATURES OF SPECIAL INTEREST TO VISITORS

SOME THINGS TO LEARN

1. Why New Orleans is of interest to visitors.
2. Why oil fields and derricks go together.

The Mardi Gras. One of the great events each year in the South is the celebration of Mardi Gras at New Orleans. This is a carnival of merrymaking in which everyone joins, and which takes place just before the beginning of Lent each year. It is not unusual for a hundred thousand people to visit New Orleans for the Mardi Gras.

The French Quarter in New Orleans. New Orleans was founded by the French, who named it for the city of Orleans in France. Many of the streets have French names, and in that section of the city known as the "French Quarter" the people use the French language.

The oil fields. Anyone traveling through Texas, Oklahoma, Louisiana, and Arkansas

will be interested in the great oil fields where petroleum is found. In many places rise hundreds of derricks, each marking a spot where a well has been drilled for oil (Fig. 164).

An oil boom, which occurs at a place where oil is discovered, often causes cities to spring up almost in a night. So eager are people to get rich from oil that wells are sometimes drilled on every vacant lot in the villages and towns.

The oldest city in our country. *St. Augustine* in Florida, founded in 1565 by the Spaniards, is the *oldest city in the United States*. In the city are remnants of the ancient wall which was built to protect the early inhabitants from their enemies, the Indians.

SOME RELATED PROBLEMS

1. Although the routes from the interior of the country to New Orleans are better than those to New York City, yet the latter has become a much greater city. How can you account for this?
2. How is it that the people of the northern states can have fresh strawberries from February on through the summer?
3. Why are there fewer good harbors on the Gulf coast than on the north Atlantic coast?
4. Why are the houses of New Orleans built without cellars?
5. Why are there fewer large cities in the South than in the North?
6. Why have we been unable to raise enough rice for our own use?
7. Show on an outline map of the United States the areas where rice and cotton are grown.

SOME THINGS TO DO

1. Find out from a painter how and why he uses turpentine.
2. Make a collection of pictures, showing all the uses that may be made of cotton and cotton seed.
3. Make a collection of pictures from this section of the United States. Postcards, catalogs, folders, magazines, and newspapers will furnish you with these. In the class arrange them by states and by cities.

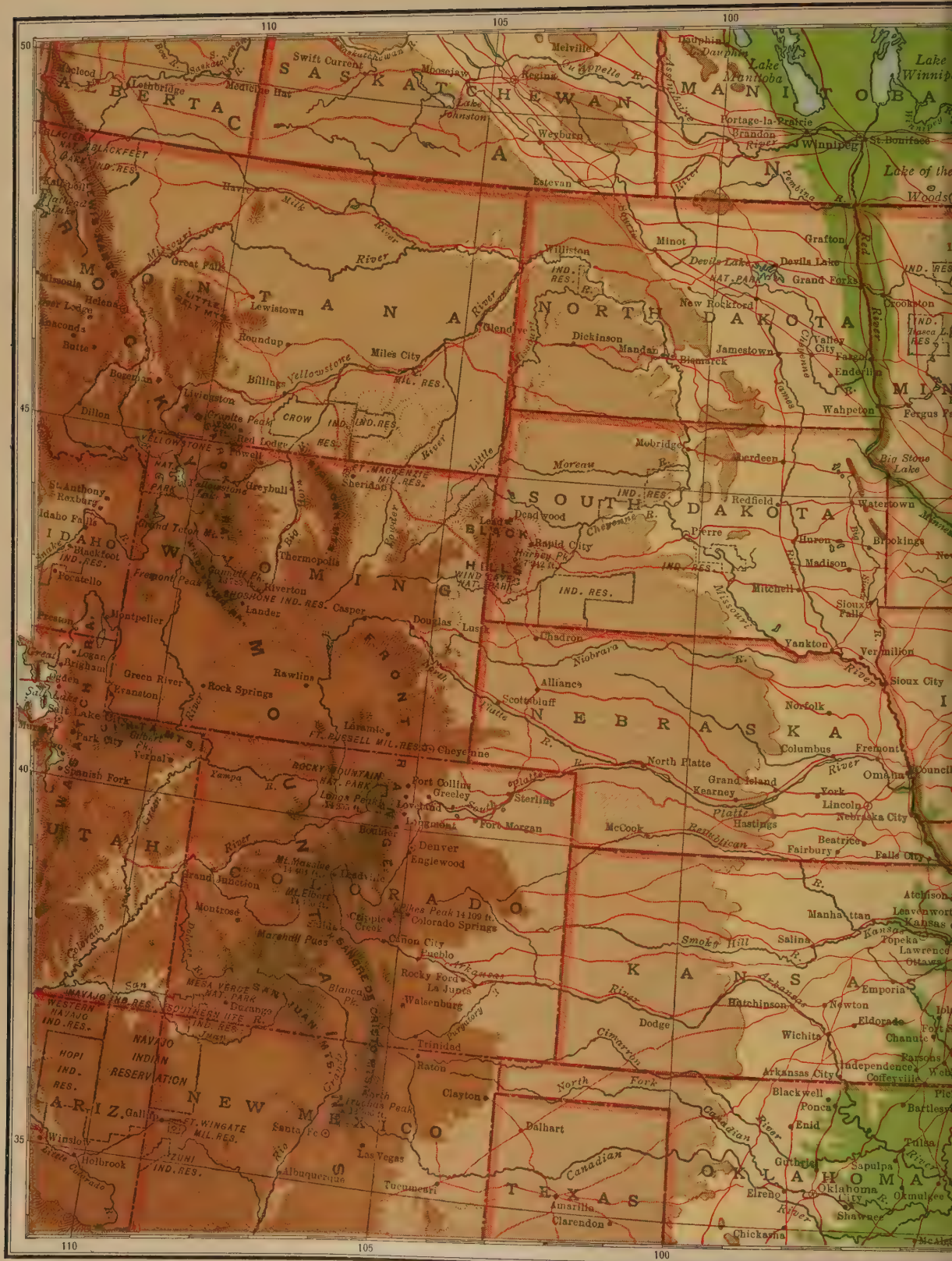


FIG. 168. A Map of

THE NORTH CENTRAL STATES

STATE	ABBREVIATION	STATE	ABBREVIATION
West Virginia	W. Va.	Minnesota	Minn.
Ohio	Ohio	Iowa	Iowa
Kentucky	Ky.	Missouri	Mo.
Indiana	Ind.	Kansas	Kans.
Illinois	Ill.	Nebraska	Nebr.
Michigan	Mich.	South Dakota	S. Dak.
Wisconsin	Wis.	North Dakota	N. Dak.

85. WHAT THE MAPS SHOW

Problems:

1. What occupations would you expect in the North Central states? (a) What three different ways of carrying goods can you find? (b) What lakes can be used for transportation? (c) What great river system can be used for moving products? What eastern tributaries of this river can be used? what western ones? (d) Pick out four of the best routes for railroads. (e) What plain covers much of the central part? What are the uses to which it may be put? (f) What plain and what mountains are in the western part? (Fig. 130.)
2. What are some of the climatic features which are likely to give this region a variety of crops and occupations? (a) Where are the coldest and the warmest parts? How does climate affect crops? (b) Tell about the differences in rainfall as one goes westward from the Appalachian Highland. How does this generally affect the life of the people? (c) Show that there is a change in crops to correspond with the decreasing rainfall (Figs. 132, 175).
3. What do the maps show in regard to the distribution of railroads in this group of states? Locate: (a) four states with few railroads; (b) three with many railroads; (c) four cities where many railroads meet. (d) What is the general direction of railroads in the western part of this area?

Questions:

1. How many states are there in this group?
2. What rivers flow into Canada from the United States?
3. Trace the divide between the Mississippi and the rivers flowing to the north and to the east.

4. Which states touch one or more of the Great Lakes?
5. How do the waters from the Great Lakes get to the ocean?
6. Trace a water route from Duluth to New York City.
7. Where would you expect to find the most important forested regions? (Fig. 175.)

Essential names and places:

Study the maps, Figs. 114, 130, and 168. Be able to name and point out on an outline map the following: All the states of this group; four of the Great Lakes; Mississippi, Missouri, Platte, and Ohio rivers; Black Hills, Great Plains, Central Lowland; Allegheny and Cumberland plateaus; the following cities: Chicago, Detroit, Duluth, Milwaukee, Cleveland, Cincinnati, St. Louis, St. Paul, Minneapolis, Kansas City, Omaha, Louisville, Indianapolis, Sioux City.

86. WHY THESE STATES ARE OUR GREATEST AGRICULTURAL REGION

SOME THINGS TO LEARN

1. The lay of the land in this region.
2. Why the soil is so productive.
3. How this region is drained.
4. Why this land was easily occupied by pioneers.
5. How the climate varies from east to west.

The general features. The greatest food-producing area of our country is the northern portion of the *Mississippi Basin*. Each year the *North Central* states produce many million dollars' worth of wheat, oats, and corn and great quantities of vegetables, fruits, hogs, cattle, and dairy products. We see, therefore, that the soil, the surface, and the climate must be especially well suited to agriculture and grazing.

Immense areas of nearly level land. The only large areas of this group of states too rugged for successful farming are the *Black Hills* in South Dakota and a portion of the Appalachian Highland in Kentucky and West Virginia.



Brown Bros.

FIG. 169. Rolling prairies. This area was formerly a great grassland. Why was it easy to turn such an area into farm land? These men are preparing the soil for the planting of seed. Why does some of the soil look dark and the rest light in color? What do these farmers gain by growing much more grain than they need for their own families?

Nearly all the land in this region is either great level or a rolling plain (Fig. 169). So gentle are the slopes here that most of the farm work can be done by machinery. For this reason crops can be raised easily, and a farmer can cultivate large areas. The farms, therefore, are larger, and food can be produced in greater quantities and with less labor than in the eastern states (Figs. 124, 134).

How the land is drained. Nearly all of this area is drained by the Mississippi River and its tributaries. Only a few short rivers flow into the Great Lakes. The streams in a small part of North Dakota and Minnesota drain northward into *Hudson Bay*. Boats can go up the Mississippi to St. Paul, and many of the tributaries of the Mississippi can be used for long distances (Figs. 86, 125, 182).

Why products can be easily marketed. The Great Lakes form the most important waterway of our country. By means of the Great Lakes and connecting canals, all the northern states of this group can ship goods easily and cheaply to the Atlantic coast.

The level plains and gentle slopes make railway building easy in every direction.

So we find that all the North Central states except those in the extreme west are well supplied with railroads. Each part of the region can easily carry on trade with all other parts. As a result, the products of all parts of this great area can be quickly transported to market, and several of the cities on the Great Lakes have become important railway centers. *Chicago* is now the greatest railway center in the world.

The nature of the soil. The soil almost everywhere is deep and rich. There are few rocks or boulders to interfere with farming. In most places the solid rock is many feet below the surface.

For thousands of years before white men came to live here, this region was covered with forests or grasses. Year after year this vegetation decayed and gradually filled the soil with vegetable matter, thus making it very fertile.

The grassland areas. Much of the eastern part of this group of states was once covered with forests. When the early settlers came they had to cut down the trees before crops could be raised. It was hard work, but the



U. S. Geol. Survey

FIG. 170. The Great Plains in western South Dakota. There is not enough rain in this region for successful farming, but it does produce excellent grass for sheep and cattle. What are some of the uses that man can make of sheep? Is this a rolling or a level country?

result was well worth the labor, for the soil here still produces abundant crops.

From Illinois westward, most of this section was a vast level or rolling grassland with only a few scattered groves of trees. Most of these trees grew along the streams. The eastern part of this great grassland is known as the *Prairies*. The early settlers found it easy to begin farming here, for the land could be plowed in the spring and a good crop raised the first year.

By offering a certain number of acres of this fine land as a free gift to any person who

would live on it and farm it, our national government helped settle this country rapidly.

The far western part of this region lies in the Great Plains area, where the native grass is short. This, therefore, is a grazing section (Fig. 170).

How the climate varies. Throughout most of this group of states the winters are cold and dry and the summers warm, with plenty of rain. All through the eastern part the rainfall is sufficient for the raising of corn, wheat, oats, flax, and other farm crops and comes at the time of year when it is most needed. In the far western part, however, the crops are mostly those that can be grown with a much smaller amount of rainfall. Here grazing is an important industry, though some crops are raised by irrigation and dry-farming methods.

87. WHAT THE FARMS PRODUCE

SOME THINGS TO LEARN

1. Why this is a great corn region.
2. Why wheat and oats do well in this group of states.
3. What makes this a good region for raising hogs.



J. C. Allen

FIG. 171. Cultivating corn in the Corn Belt. Corn cannot thrive without man's help. Cultivating helps the corn by killing weeds, and by keeping the soil loose. What are some of the uses man makes of corn? What kind of land surface is best for corn?



FIG. 172. Harvesting oats. Each of these tractors is pulling two harvesters, or binders as they are commonly called. Can you think of any ways in which a tractor is better than horses for harvesting grain?

Courtesy of International Harvester Co. of America

Why it is so important for cattle feeding.
What the best hay and pasture crops are.
Reasons for dairying, vegetable gardening,
and fruit growing.

Why this is the world's greatest corn area.
far the largest part of the corn crop of
world is raised in seven of these states.
area included in Ohio, Indiana, Illinois,
a, and Nebraska, therefore, is often called
Corn Belt (Figs. 171, 175). Oklahoma
Texas are two important corn states not
nd here, and each year Kentucky and
nessee raise more and more corn.

here are several reasons why this region
become the greatest corn-growing region
he world. The surface is nearly level,
soil is fine and rich, and plenty of rain
in the growing season. In this season
days are hot and the nights are warm,
there are at least one hundred and fifty
s free from frost. Then, too, most of the
k of raising and harvesting the corn crop
be done with machinery.

corn is grown in every state in the country,
it is the chief crop in the Corn Belt. In
e sections of the Corn Belt one may ride
ly all day in a train and in every direc-
see practically nothing but corn fields.

What makes this a great grain area.
Wheat, too, may be grown in all these
states, but the greatest yield comes from the
cooler northern states. In the corn states
wheat is sown in the autumn and ripens in
the early summer. This is the winter-wheat
area (Fig. 175).

In Minnesota and the Dakotas wheat is
not sown until spring, because of the severe
winter. This is the spring-wheat section.
In this area less corn is produced because
the growing season is short. In the spring-
wheat section and in parts of the winter-
wheat area, great quantities of oats are raised
(Fig. 172). Much rye, barley, and flax
are grown in the spring-wheat section. In
the United States flax is raised for its seed,
from which we secure a valuable oil.

The chief reasons why this is a great grain
area are the favorable climate and the lay of
the land, which makes it possible to do nearly
all the work with machinery.

Why this is the leading hog-raising area.
The states which produce the most corn are
also the great hog-raising states, for corn is
one of the best foods to make hogs fat. The
young pigs get their growth from eating
clover and alfalfa, both of which are grown



J. C. Allen

FIG. 174. Storing hay for winter feeding.

The hay is usually fed to the animals when there is no pasture for them.

During what time of the year is the haying done?

Explain how the hay is moved from the wagon into the barn.

What does the farmer store in the large, round building at the left? Do you know what such a building is called?



FIG. 173. Alfalfa in North Dakota. Alfalfa grows so rapidly that several crops can be harvested each year. Why is it a good crop for farmers to grow? Why is the hay heaped in piles before it is taken to barns?

here. The pigs are fattened on corn in the autumn and winter months. They are then shipped to the great packing houses, where they are made into hams, bacon, and lard, which are sent to the city markets to be used or exported (Fig. 175).

A great stock-raising area. Corn is not only good for fattening hogs, but it is also good for fattening cattle. Next to Texas this group of states is the greatest beef-raising section of the country. After the calves are grown and ready to fatten, they are fed corn. Many full-grown cattle are shipped from the dry, grassy regions farther west and south into this area to be fattened or made ready for the market.

Horses are raised in Illinois, Iowa, and several other states of this section. Many sheep are raised in Ohio (Fig. 175).

Where tobacco is raised. Tobacco is another crop that grows well in some parts of this region. More than one-third of the tobacco grown in the United States comes from Kentucky. The rich soil and mild climate of that state are well suited to its growth. Ohio, Tennessee, and Wisconsin are other important tobacco states of the Mississippi Valley.

Other agricultural activities. All stock gets most of its growth from hay and pasture. Hay and pasture, therefore, are important everywhere in this region (Figs. 173, 174). Timothy, clover, alfalfa, and wild grass make the best hay. Blue grass, clover, and wild grass make good pasturage.

Owing to the large number of cities dairying is a necessary industry in many sections. Wisconsin is the first state in the country for dairying and in the making of butter and cheese.

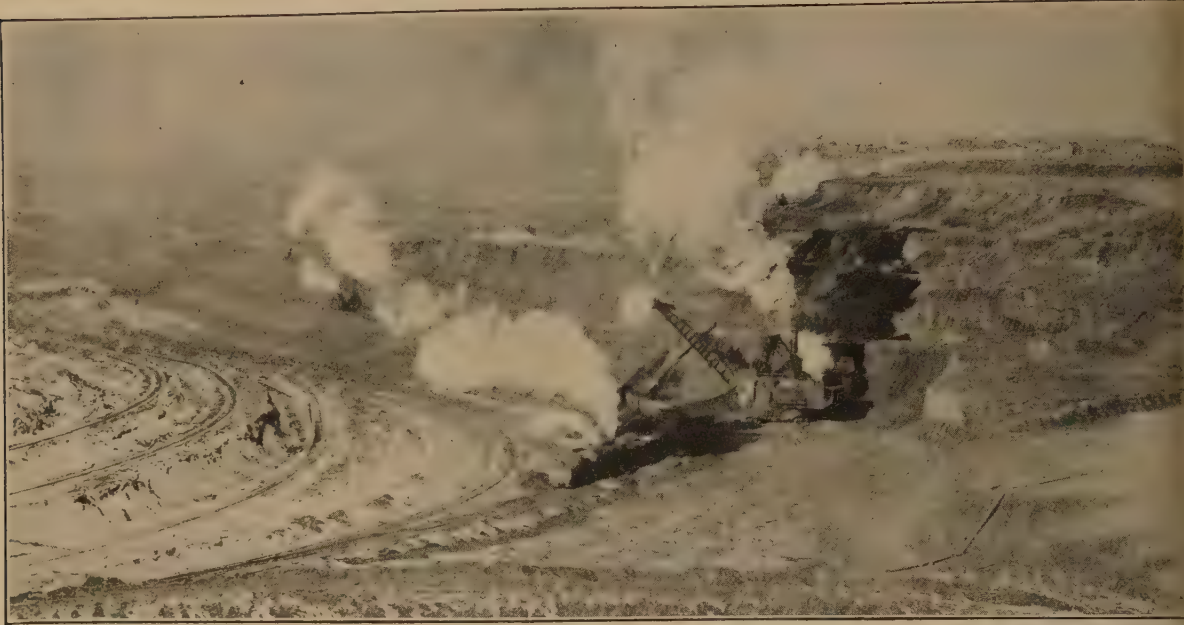
The large cities also furnish markets for fresh vegetables and fruits, both of which are grown extensively. Peas, corn, and tomatoes are raised for canning. In the raising of apples, peaches, and strawberries



There are few temperate-region crops which are not raised in this section of the Mississippi Valley (Fig. 175).

would the greatest number be found?

1. What has become of the great forests that once covered many states in this group.
2. Where lumbering is still carried on.
3. Where coal, natural gas, and petroleum are found.
4. Where iron ore is mined.



Courtesy of Iron Trade Review

FIG. 176. View of an iron mine in Minnesota. This picture was taken after a light fall of snow. Note how the layers of earth are taken off until the iron ore is reached. The big steam shovels scoop up the ore and load it into freight cars.

5. Why manufacturing is so great an industry in this great agricultural region.
6. Which water routes are most used.
7. Why railways are so necessary.

What the forests produce. In pioneer days most of Ohio and Indiana was forested, but now nearly all of the land has been cleared and is used for farming. Michigan, Wisconsin, and Minnesota once formed the great lumber section of the country. As the forests have been cut, agriculture has come in, and today lumbering is much less important. The lumber from this section is used largely for building and for furniture (Fig. 136).

The importance of mining. From this group of states comes most of the iron ore which is made into steel for the buildings, the machinery, the railroads, and the bridges of the country (Fig. 176). This, too, is a great soft-coal region, and is also an important petroleum and natural-gas area. Add to these minerals the copper, gold, zinc, lead, and other metals found here, and you can easily see why these states are the mining center of the country (Fig. 177).

The iron mines of Minnesota, Michigan, and Wisconsin are the greatest in the United States. The iron ore is carried mostly to cities on the southern shores of the lower Great Lakes, where it is made into steel by means of coal from mines near by (Figs. 180, 181). Nearly every state of this group has its coal mines, but West Virginia, Ohio, and Illinois lead in coal production, and *West Virginia* excels in the output of natural gas. *Michigan* is the oldest state in copper production, the mines having been worked for more than seventy years. The copper district is near the southern shore of Lake Superior.

The important manufacturing interests. Although this group of states is a great farming section it is also famous for its various manufactures, especially for those of Illinois, Indiana, Ohio, and Michigan. The farms furnish raw material for the meat-packing plants (Fig. 178), the flour mills, and the canneries, and the farms in turn are also a good market for the agricultural tools and machinery made so extensively in Indiana and Illinois.



Meyers, Lead, S. D.

FIG. 177. A mining city in the Black Hills. Lead is an important gold-mining city in South Dakota. How does Lead differ from other towns that you know?

Ohio is widely known for its rubber products, and for its drain pipe and other goods made from clay. *Michigan* makes more automobiles than any other state, while *Minnesota*, close to the grain fields, is first in making flour. *Wisconsin* and *Michigan* produce lumber and furniture.

These are but a few of the many kinds of manufacturing carried on in the North Central states.

The place of transportation and trade. In this region so productive and with such good transportation by rail and water, naturally there are many flourishing commercial cities. One can make a continuous journey by water from Lake Ontario to Lake Superior. This was made possible by constructing the " Soo " Canals and locks around the rapids lying between Lake Superior and Lake Huron (Fig. 126), and the Welland Canal and locks around Niagara Falls (Fig. 149). Along this water route pass much of the

iron, wheat, and lumber and the many kinds of manufactured products sent out from the different parts of this rich region.

89. CITIES IN THE GREAT LAKES REGION

SOME THINGS TO LEARN

1. Why Chicago has become a great city.
2. Why Detroit is a manufacturing and commercial city.
3. Why Duluth is a great lake port.
4. What industries have made Milwaukee a large city.
5. The product for which Cleveland is best known.

Our greatest inland city. Chicago is the *second city of our country in size* (Figs. 178, 179). It is famous for meat packing and for the manufacture of foundry products, finished lumber, and agricultural implements. Next to New York it is the greatest manufacturing city in the country.

There are several reasons why Chicago has become a great city. One of them is its position on the southern shore of Lake Michigan at one of the points farthest inland on the Great Lakes water route. All railways from the West and Northwest naturally



FIG. 178. A view of the Union Stock Yards, Chicago. Many hundreds of carloads of live stock—cattle, sheep, and hogs—come into Chicago every day. What is done with so many animals? Name several other cities with large stock yards and meat-packing plants.



FIG. 179. An elevated railway in Chicago. Even with surface cars, elevated railways, motor busses, and automobiles, travel in Chicago especially during the morning and early evening is difficult. What other means of travel does New York City have?

meet here as they pass around the southern shore of Lake Michigan. So you see Chicago is both a great railway center and a great lake port.

Hence Chicago has become the principal distributing center both for products shipped out of the region and for supplies brought in. Here are found great elevators for storing grain until it can be shipped to the East or started on its journey to foreign lands.

The world's greatest automobile city. Detroit, Mich., has grown rapidly in the last twenty years, and is now the *fourth city in the United States in size*. More automobiles are made in and around Detroit than in any other city in the world.

Let us look for some reasons for the growth of this city. Detroit is located on the Great Lakes water route between the iron mines of Minnesota and the coal mines of Ohio and Pennsylvania. Thus steel for manufacturing is easily secured. Then, too, the forests of Michigan furnish the hardwood needed in the building of automobiles.

Important railways from the West pass through Detroit along the north shore of Lake Erie to Niagara Falls, Buffalo, and New York City. So Detroit is well located not only for obtaining raw materials for manufacturing, but also for the distribution of goods which are manufactured there.

Other important lake cities. Milwaukee, on the west shore of Lake Michigan is the chief city of Wisconsin. It is important for the shipping of grain and the distribution of coal brought from Ohio and Pennsylvania. Besides this, there are large manufactures of leather goods, machinery, and flour.

Duluth, Minn., at the west end of Lake Superior, ships much iron ore, wheat, and lumber (Fig. 180). It is also a leading center for the distribution of coal to the Northwest.

Cleveland, Ohio, now ranks *fifth* among the great cities and is the largest city on the shore of Lake Erie. Much coal is shipped



FIG. 180. Iron-ore railroad docks at Duluth, Minnesota. A large ore boat is being loaded at the upper end of the first dock on the right. On the map trace the water route this boat would take to South Chicago and to Cleveland.

Courtesy of Iron Trade Review

in this port and much iron ore is received. The greatest industry of the city is the manufacture of steel and iron (Fig. 181).

90. IMPORTANT RIVER CITIES

SOME THINGS TO LEARN

The reasons for the growth of St. Louis.
Why Minneapolis is a great flour-milling city.

Reasons for some other large river cities.

the largest city on the Mississippi River.
St. Louis, Mo., is the *sixth city of the United States* in size. It is situated on the Mississippi a few miles below the mouth of the Missouri and about one hundred and fifty miles above the mouth of the Ohio. Thus it is favorably located for river traffic, having both north and south and east and west water routes. St. Louis is also the second largest railway center in the United States, having lines lead-out in all directions.

The rich agricultural and mining region surrounding this city makes it both a market and a distributing center. The manufactures include meat-packing products, boots

and shoes, lumber, flour, furniture, and paint. St. Louis is one of the world's greatest fur markets.

Because of its location, St. Louis was the center from which started the overland freight caravans to the West before railroads had made it easy to reach this region from all parts of the country.

The greatest flour-milling city. *Minneapolis, Minn., manufactures more flour than*



Ewing Galloway

FIG. 181. A view in the factory district of Cleveland. In the factory shown in this picture melted iron is molded into useful articles. From what section does the iron ore come? How is it brought to Cleveland? Why must a steel mill have good railroad connections?



Caufield & Shook, Inc., Louisville, Ky.

FIG. 182. Boat entering the Louisville and Portland Canal. The rapids in the Ohio River made necessary the building of this canal. How can a canal and locks help a boat pass the rapids in a river? How does this boat differ from the one pictured on the Mohawk River? (Fig. 146.)

any other city in the world. There are several reasons for this. First, the wheat is near at hand, for Minnesota and the Dakotas produce some of the finest wheat. Secondly, the water power furnished by the *Falls of St. Anthony* made this city a natural milling center, especially before coal was easily secured. Finally, Minneapolis has excellent trade routes by both rail and water to the markets and ocean ports of the country.

Minneapolis also manufactures linseed oil and oil cake, both made from flax seed grown near by. *St. Paul*, the capital of Minnesota, is so near Minneapolis that the two cities really form one great center of industry. They are often called the "Twin Cities."

Other river cities. On the banks of the Ohio are *Cincinnati*, Ohio, and *Louisville*, Ky. (Fig. 182). The former, the largest city in the Ohio Valley, is known chiefly for the manufacture of boots and shoes, artistic pottery, and soap. Cincinnati has also a great river trade up and down the Ohio. *Louisville* is the largest city in Kentucky and the most important tobacco market in the United States.

Indianapolis, the capital of Indiana, on a small branch of the Ohio, is an inland city. It owes its growth to the rich agricultural region surrounding it and to the network of railways, many of which center here and connect it with farming centers and markets.

On the Missouri River are *Kansas City*, Mo., *Omaha*, Nebr., and *Sioux City*, Iowa, all great meat-packing cities, owing to their nearness to the stock-raising areas.

91. OTHER INTERESTING FEATURES

SOME THINGS TO LEARN

1. Why the Prairies and the Great Plains are of interest to travelers.
2. How the landscape changes as one travels from west to east in this group of states.
3. The use of the Keokuk Dam.

Attractive recreation places. The forests and lakes of Minnesota, Wisconsin, and Michigan are attractive centers for summer homes and for hunting and fishing. In the *Straits of Mackinac* between Lake Michigan and Lake Huron are a large number of beautiful islands which are noted summer resorts. Because of their scenery and high



Courtesy of Chamber of Commerce, Marietta, Ohio

FIG. 183. A scene in Ohio. This picture is at Marietta near where the Muskingum River joins the Ohio. Give some reasons why you would enjoy traveling through this country.

altitude the Black Hills of South Dakota and the highlands of West Virginia and Kentucky contain many health and pleasure resorts. **A boundless landscape.** The eastern part of this group of states is a rolling country covered nearly everywhere by grass or grain. Scattered here and there are groves and groups of farm buildings which give variety to the landscape, so that a ride through the country is a continuous delight to the traveler (Fig. 183).

As one travels westward, trees become fewer and fewer and the western portion is almost treeless. One who has always lived east of the Mississippi is strangely impressed by the vast, level stretches of land, the rolling hills, and the distant views.

Being able to see such great distances in all directions makes one feel the bigness of the Great Plains.

The Mammoth Cave. One of the best-known natural features of our country is the Mammoth Cave in Kentucky (Fig. 184). In it are rivers, rapids, waterfalls, and many

wonderful rooms and branch caves. Men have explored one hundred and fifty miles of passages in this cave, yet some parts of it are still unknown and unexplored.



FIG. 184. A room in Mammoth Cave, Kentucky. Why is a large cave interesting to visit? Would it be warm or cool, wet or dry, in an underground room such as this?



Ewing Galloway

FIG. 185. The Keokuk Dam across the Mississippi. This is the world's biggest power dam. Where are the locks located? Why are locks needed? Where is Keokuk?

Keokuk Dam. Across the Mississippi at Keokuk, Iowa, the national government has built a dam thirty-five feet high and nearly a mile long (Fig. 185). This is the largest power dam in the world. The great power plant here develops electricity to run street cars and to light cities. It also furnishes power for many factories in nearby cities and towns. Even St. Louis, one hundred and fifty miles away, benefits largely from this great power plant. Many other rivers, affording power which can be used in place of coal, may some day be made to work for man in this way.

SOME RELATED PROBLEMS

1. Why are there a number of large cities on the Ohio River?
2. Why do the railroads of the western part of this region run mostly east and west?
3. Why should this region have large manufactures of agricultural tools and implements?
4. Why is petroleum so valuable?
5. Why has Cleveland become a great iron and steel manufacturing city?

6. Why was St. Louis a starting point for travel to the Far West in the early days of the country?
7. Where are the iron ore of Minnesota and the coal of Ohio and Pennsylvania brought together to make steel?
8. Locate some lake ports in this group of states. Try to find out what products are sent out and received at these ports.

SOME THINGS TO DO

1. Look for the name on a farm wagon and find out where the wagon was made.
2. Study the advertisements in magazines and find out where furniture is made. You may find that some furniture in your home is labeled to indicate the city in which it was made.
3. Look at the label on a can of meat to find out where the meat was packed.
4. From the label on a sack of flour, find out where the flour was milled.
5. Make a list of all the products you know that come from cattle, sheep, and horses.
6. Make a collection of post cards and pictures of scenes in this group of states. Arrange these pictures by states.



FIG. 186. A view of Pikes Peak. This picture was taken looking through the gateway to the Garden of the Gods. Pikes Peak is near Denver, the largest city in the Rocky Mountain region. How high is the peak? How can one easily make the ascent?



FIG. 187. Looking across the Grand Canyon of the Colorado. This valley is about one mile deep in some places. How do you think this great valley was made? Why is it especially interesting? Does it look as if some of the rocks had worn away faster than others?



THE PLATEAU STATES

STATE	ABBREVIATION	STATE	ABBREVIATION
Montana	Mont.	Arizona	Ariz.
Wyoming	Wyo.	Nevada	Nev.
Colorado	Colo.	Utah	Utah
New Mexico	N. Mex.	Idaho	Idaho

92. WHAT THE MAPS TELL US ABOUT THE PLATEAU STATES

Problems:

1. Follow these rivers from the mountains or divides and see into what bodies of water they flow: Missouri, Platte, Arkansas, Grande, Colorado, Snake. (a) Trace the drainage divide on the map, Fig. 188. (b) Trace east and west river routes from the divide in western Montana. (c) Follow rivers from the divide in Colorado and Wyoming. (d) Trace the rivers from the divide in western New Mexico.
2. Give three reasons why this area is not a good farming region. (a) What does the products map show us? (Fig. 193.) (b) Look at the rainfall map (Fig. 132) and see if this gives you any help. (c) What does the physical map show as to the probability of much farming? (Fig. 188.) (d) Does the railroad map give you any light on the question?
3. How do the states of this group compare in size with other states in the Union? (a) Make a list of the seven largest states of the country (see Appendix). (b) How many and which ones are in the plateau region?

Questions:

1. How far is it from Denver, Colo., to Reno, Nev.? from Douglas, Ariz., to Havre, Mont.?
2. In what direction do the Rocky Mountains extend?
3. How far is it from Canada to Mexico?
4. Which states of this group touch Mexico? Which touch Canada?
5. What three states border on Yellowstone National Park?
6. What minerals are found in the different states? (Fig. 193.)
7. How many states in this group? See how the square or rectangle that covers New

England fits the area covered by the Plateau states (Fig. 133).

Essential names and places:

Study the maps, Figs. 114, 130, and 188.

Be able to name and point out the following on an outline map of this region: Rocky Mountains, Great Plains, Columbia Plateau, Great Basin, Colorado Plateau, and Pikes Peak; the Rio Grande, and the Missouri, Snake, Arkansas, and Colorado rivers; Yellowstone National Park, Grand Canyon, Great Salt Lake; all the states and the following cities: Denver, Salt Lake City, Ogden, Pueblo, Colorado Springs, Phoenix, Tucson, Boise, and Butte.

93. HOW THE SURFACE VARIES

SOME THINGS TO LEARN

1. Names and locations of the larger surface features.
2. Names of rivers that drain these states.
3. What the Great Basin is.

The Rocky Mountains. The Rocky Mountains extend from the Canadian border on the north to the Mexican border on the south, and include numerous ranges and peaks (Fig. 186). They rise very sharply above the Great Plains, and have few cross valleys or passes that can be used by railroads to connect the eastern portions of these states with the Great Basin and the Far West.

The most noted mountain of this region is *Pikes Peak* in Colorado (Fig. 186), more than 14,000 feet high. Early travelers across the plains used this peak as a guide, because near it lies a valley which furnishes a route across the mountains. Although it is the best-known mountain of the Rockies, there are many that are higher (Fig. 188).

The great plateaus. In Arizona and New Mexico is the *Colorado Plateau* (Fig. 189) and in southern Idaho is a part of the *Columbia Plateau*. Many parts of these great, broad plateaus are more than 7,000 feet in height, a greater height than that of any mountain found in the eastern states.



FIG. 189. Scene along a national highway in Arizona. Superstition Mountain is at the left. Note the tall cactuses growing beside the road, and the scanty vegetation.

Courtesy of Bureau of Public Roads, U. S. Dept. Agri.

The Colorado Plateau is especially interesting because through it the *Colorado River* has cut the most wonderful river valley in the world (Fig. 187). In places the little stream lies more than a mile below the top of the plateau.

The important rivers and the Great Basin.

The region east of the *Continental Divide* (Fig. 188) drains into the Gulf of Mexico by way of the Rio Grande or the Mississippi. The Colorado River flows southward into the *Gulf of California*, and the branches of the Columbia carry water through the western mountains into the Pacific Ocean.

Between the mountains on the east and those bordering the Pacific is a large area known as the *Great Basin* because all the water that falls in this region flows down to the lowest places in it and there forms lakes which dry up. The rainfall here is so scanty that the lakes do not fill up and overflow through streams to the ocean.

All streams contain some salt which they have dissolved from the soil, but the amount

is so small that we cannot taste it. Indeed, it is the dissolved material in the water we drink that makes it taste good. So the rivers that flow into the Great Basin all carry salt. But in this dry region, where the sun nearly always shines brightly, a large portion of the water dries up quickly and the remaining water becomes strong with salt. If a salt lake is completely dried up, a deposit of salt is left that may be several feet deep. The largest of the salt lakes in our country is *Great Salt Lake* in Utah.

94. HOW AGRICULTURE IS CARRIED ON SOME THINGS TO LEARN

1. The sections that are not favorable for agriculture.
2. Why irrigation is carried on.
3. How water is secured for irrigation.
4. Why dry farming is done.
5. Why ranching is profitable.

The surface and the climate. A large part of the plateau region is too mountainous for farming. But on the Great Plains area

just east of the Rocky Mountains there is much land that can be farmed, and many mountain valleys yield fine crops (Fig. 193).

In much of this region, however, there is so little rain during the growing season that the land becomes very dry. This means that crops can be grown only by irrigation.



FIG. 190. An irrigated orchard near Grand Junction, Colorado. Locate Grand Junction on the map. Why is irrigation necessary here? What are the furrows for? From what river is the water secured?



Brown Bros.

FIG. 191. Sheep in the mountains of Montana. These sheep have been shorn and are now being taken over the mountains where better pasture may be secured. At what time of the year are sheep shorn? Why do these men raise so many more sheep than they need for their own use?

The driest areas are in New Mexico, Arizona (Fig. 189), Utah, and Nevada, where but a few plants grow, even wild, except on the higher mountain slopes.

Why irrigation is important. Just as during the summer the garden or lawn must be watered occasionally, so in a dry region the land must be *irrigated* or watered if the farmer expects to raise crops (Fig. 190). The water for irrigation is taken from the streams. In several places great dams have been built across mountain streams. These dams help to make reservoirs where water is stored during the winter and spring to be used on the growing crops when needed.

In this section the chief crops grown by irrigation are alfalfa, sugar beets, vegetable fruits, and cotton.

How dry farming is done. There is not enough water to irrigate all of this great dry area. In many places, however, if the farmer knows how to till his soil so as to keep the rain water from being quickly dried from it, he can raise grain crops. This way of tilling the soil is known as *dry farming*. The seed used in dry farming should come from grain that has been grown in a dry region.

Why ranching is a leading industry. The Great Plains area is a natural grazing region because the short, wild grass growing here furnishes feed all the year round. Before the white men came, great herds of bison, buffaloes, lived here, as they did on the Prairies. Almost all of these have been killed; the few that are left being kept in government reserves or parks to protect them. In some parts of our country we can still see the trails made by buffaloes as they traveled single file to springs to drink.

The buffalo and the eagle are both now rarely seen. They both make us think of freedom and independence. They are both American, and have therefore been chosen to be stamped on our coins to remind us of the early days of our country.



Southern Pacific Photo

FIG. 192. A view of a mining town in Nevada. This town, Tonopah, is like all the mining towns of this region. This section of Nevada is rich in both silver and gold. What reasons would you give for the lack of trees?

great herds of cattle and sheep, to feed the millions of people in the country, now graze where once great herds of buffalo roamed. The cattle are usually sent to the corn region to be fattened, and from there are shipped to the great meat-packing cities of the North Central states. Sheep are raised both for food and for their wool. The leading stock-raising states are Idaho, Montana (Fig. 191), Wyoming, Colorado, New Mexico, and Utah. The work of raising cattle and sheep in a region where it takes much land to furnish enough food for one animal is known as *ranching*. A *ranch* is a large area of land which one man, or a company, owns and uses for grazing. There are many ranches on the western edge of the Great Plains and in the valleys among the western mountains. Cattle, horses, and sheep are all raised on ranches, but sheep are not usually kept on the same ranches with horses and cattle. The ranchmen must see that the stock have plenty of water and grass, and do not stray

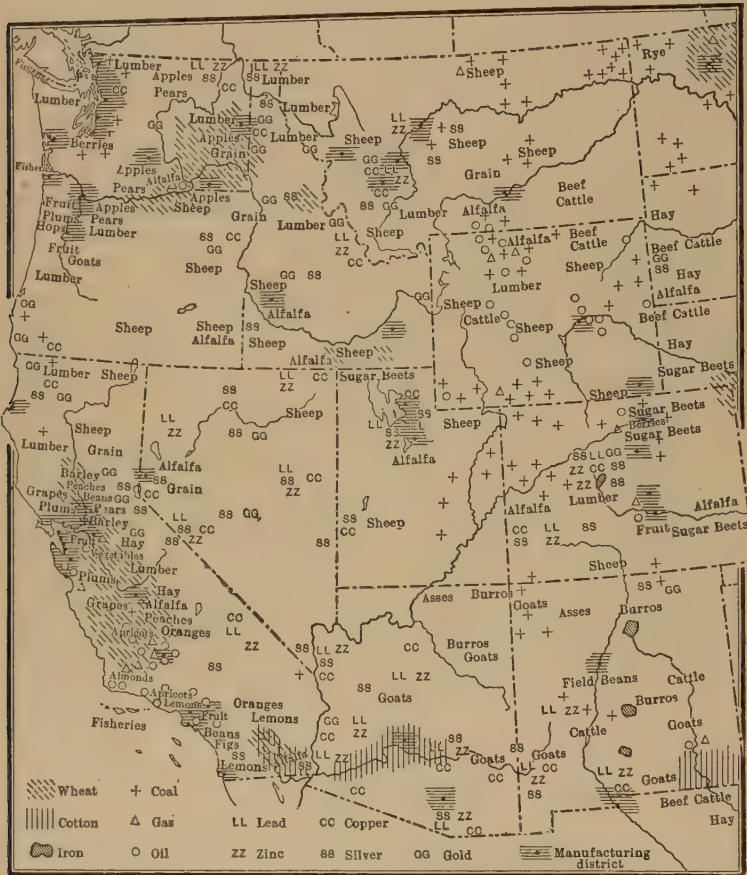
away. When one pasture has been used up, the animals must be driven to new feeding grounds. During the winter they must be herded where there is good food and little snow. The rancher therefore has to care for his stock the year round. The work is hard, but as the men live out of doors most of the year it is healthful work, and many men like it.

95. OTHER LEADING INDUSTRIES

SOME THINGS TO LEARN

1. What are the chief products of the mines.
2. Who discovered the gateways through the mountains.
3. What difficulties early travelers met with in this region.
4. Why manufacturing is developing.

What the mines produce. All the Plateau states are rich in minerals (Figs. 192, 193), and some of the older mining towns, such as *Butte*, Mont., and *Leadville* and *Cripple Creek*, Colo., are known all over the world. Today



copper is one of the most important metals because it is used so much in electrical work. Some of the new copper-mining towns are better known than many of the older and larger manufacturing cities. *Arizona* is the first state in the production of copper, and *Montana* the second. *Nevada* ranks first in silver production (Fig. 192), *Colorado* second in gold, and *Idaho* is rich in lead. *Wyoming* has much petroleum and natural gas (Fig. 193).

The problem of transportation. The first white people to come into this region were hunters and trappers. They had many thrilling experiences fighting the Indians, and met with great hardships traveling through a dry country. It was the trappers who found the passes in the mountains and opened up the trails across the plateaus and the Great Basin.

Great railroads now run through this region from the Mississippi Valley to the

Pacific coast. Into the Mississippi Valley from the east come other roads which connect it with the great cities of the Atlantic coast. Railroads which stretch across the continent in this way are called *transcontinental lines*. The most important transcontinental lines are those which go through *Montana* on the north, *Colorado* in the center, and *New Mexico* on the south. Main branch lines extending out from the main lines to the different agricultural and mining districts connect the smaller towns with the markets of the world (Fig. 188).

The place of manufacturing. Only a few types of manufacturing are important in this group of states, and each has to do with mining. These are the stamp mills that crush the ore rock, and the smelters where the ores are heated so that the pure metal may be secured.

FIG. 193. An industrial map of the Plateau states and the Pacific Coast states.

In how many of these states is lumber cut? In which states is alfalfa raised?

Why is the cotton area small in these states? What makes you think it is an irrigated area?

Can you find a section in which hogs are raised?

Which state produces the most minerals?

In what valleys are the great fruit areas?

What different kinds of fruit are raised?

In what way do the fruits of southern California differ from those of Oregon and Washington?

Which of these states raise sugar beets?



Official Photograph, U. S. Army Air Service

FIG. 194. A view of Yellowstone Falls and the canyon. This picture was taken from an airplane, so you are looking down on the falls and the river. How deep do you think this canyon is? What caused the canyon?

other kinds of manufacturing which will make use of the forest and farm products and furnish useful supplies for the people are coming in slowly. Among them flour, lumber and beet-sugar mills lead. As these are established, the people of this section will not be dependent on other parts of the country.

5. FEATURES OF SPECIAL INTEREST

SOME THINGS TO LEARN

The many attractive features of Yellowstone National Park.

Why the Grand Canyon is famous.

The cause of Great Salt Lake.

Why these states are visited by tourists.

Interesting facts about the Indians here.

Yellowstone Park. One of the most interesting areas in the world is *Yellowstone National Park*, in northwestern Wyoming (Figs. 188, 194). The national government has made this area into a public park which many visit during the three summer months. The rest of the year it is covered deep with snow, and visitors cannot get about.

In the park are hundreds of hot springs and *geysers*. A geyser is a spring which shoots out jets of hot water and steam at frequent intervals. Some of the largest geysers send water to a height of more than two hundred feet. The water is forced out by steam which has been formed in the hot

rocks underneath the surface. The best-known geyser in the park is Old Faithful, which spouts regularly once an hour. First it bubbles and gurgles, then it suddenly shoots a column of hot water high in the air. This cools, and clouds of steam roll away. In a few minutes the geyser stops spouting, and all is quiet for another hour. In some sections several geysers may be seen all spouting and steaming at the same time.

But the most beautiful sight in the park is *Yellowstone Canyon* (Fig. 194), a valley cut by the *Yellowstone River* deep into the many-colored rocks. At the upper end of the canyon is *Yellowstone Falls*, one of the most beautiful falls in the country.

The park is the home of many wild animals such as beaver, bears, deer, and bison. No one is permitted to shoot them, and they have become very tame. Even the bears will eat out of one's hand.

The Grand Canyon of the Colorado. The *Grand Canyon* of the Colorado River in Arizona is one of the most beautiful valleys known (Fig. 187). The rocks in the sides of this great valley are of many striking colors. They have been weathered into strange shapes. From the top of the canyon one may look down on hills that are as high and as big as some of the mountains east of the Mississippi. The plateau in which the canyon lies is a wild and interesting region covered with forests of large evergreen trees. From the various points reached by train or automobile, visitors can look across a valley more than ten miles wide to the forest-covered plateau on the other side. In every way this region is one of the most wonderful scenic places in the world.

Great Salt Lake. Great Salt Lake, Utah, is nearly one-fourth as large as Lake Ontario. This lake is all that is left of a great freshwater lake that once occupied a large part of the Great Basin. The lake has dwindled in size as the water has dried away, and now it

is a salt lake. The water is so salty that a man can float in it much like a

The large lake once found here was filled by fine rock materials brought from the surrounding mountains by rivers. As the lake dried up, the shallow portions became land. Most of this rich land is now farmed by means of irrigation and produces fine crops of grain, fruit, and stock. The leading cities of the Great Basin are found near this rich farming region.

Beauty of the mountain scenery. Mexico, Colorado, Montana, and Wyoming abound in scenery of great beauty and contain many wild animals which attract who like to hunt big game.

The beauty of the scenery and the dry air make this a favorite region for tourists and health seekers. Thousands of people visit this region each year. A few years ago visitors to the West traveled mostly by railroad, but now great numbers travel through the mountains in automobiles, camping by the wayside at night.

Glacier National Park in Montana (Fig. 195) and *Rocky Mountain National Park* in Colorado (Fig. 196), like *Yellowstone National Park* have been set apart by the United States and are much visited in summer because of their beautiful and interesting scenery.

Life among the Indians. Before the white men came to America, Indians lived in all parts of what is now the United States. Today Indians for the most part live in the West, though small groups are still found in Massachusetts, Connecticut, New York, and other eastern states. Most of the Indians now live on reservations set apart for them by the government, and most of the reservations are in this group of states.

Formerly the Indians made their living by hunting, and carried on only a little agriculture. Today some make a living by farming, but more of them raise cattle, horses, and sheep. Some tribes are expert in



Courtesy of Great Northern Railway

FIG. 195. A view in Glacier National Park. This picture was taken in what is known as "many glacier region." Note the scanty growth of trees on the higher slopes. Do you think the water in these lakes is cold? What helps to feed them?



Courtesy of Denver Tourist Bureau

FIG. 196. A summer view across Estes Park, Colorado. Estes Park is one of the valleys in Rocky Mountain National Park. The highest point in the picture is Longs Peak, 14,256 feet, one of the highest peaks of the Rocky Mountains in the United States. Estes Park is much visited as a summer resort.



FIG. 197. A Navajo weaver. The Indians of this region weave and make blankets as did their ancestors hundreds of years ago. What do they do with these blankets? Why do you think this is a dry country?



FIG. 198. Home of a Blackfoot Indian chieftain in Montana. The home is a tepee, or tent, and it is nicely decorated inside with prized ornaments.

making of beadwork, blankets, pottery, and baskets (Fig. 197). These handmade articles are sold to visitors as souvenirs of their visit to the Indian country.

The Indians who have sheep or burros live in tepees or wikiups (Fig. 197). The tepee is a round tent usually made of cloth or of

skins of animals. The wikiup is an dwelling made of a framework of poles, reeds, and covered with earth, grass, blankets, or skins. Indians who have flocks and herds must be able to move about the country easily. Hence they have little furniture. They can quickly pack their household goods, horses and move to a new place. In this dry region one can sleep on the ground almost the year round, and a few blankets make a comfortable bed.

Some of the Indian tribes of Arizona and New Mexico live in towns and make their living by farming. These are known as Pueblo Indians and their towns are called pueblos. Their houses are made of stone or sun-dried brick called adobe. On account of the dry climate the roof is flat and is often used as a sleeping place in the summer. Some houses are several stories high and have many rooms for many families. One house can shelter as many people as a small town.

A long time ago many pueblos were built by people who have now all disappeared. Their pueblos are in ruins. All that we know about them has been learned from studying the ruins and the drawings the people made on the rocks. These picture stories give us many facts about their life and work.

Some of the Indians of long ago built their houses under overhanging cliffs so they could be easily defended. These people were called cliff dwellers (Fig. 199). The cliff houses are now in ruins also, but they contain many things which help us to understand many things about the way the people lived.

97. THE IMPORTANT CITIES

SOME THINGS TO LEARN

1. Four reasons why Denver has become a great city.
2. Three reasons for the growth of Salt Lake City.
3. The names of seven other cities and one important fact concerning each.

199. Ruins of ancient dwellings.

The cliff dwellers built their homes on ledges under overhanging cliffs in the valley walls of canyons.

Why did they choose such a strange location?

What are some of the disadvantages of a home in such a location?

Where would the cliff dwellers have to go to get the water they needed daily?



Denver & Rio Grande Railroad

Why Denver is a growing city. *Denver*, is situated in the Great Plains area, a short distance from the foot of the Rocky Mountains. Most of the great cities we have studied so far have been located on fine rivers or harbors, or on large rivers or lakes. Denver has none of these advantages. But its location stands near one of the best gateways to the Rocky Mountains and the Far West. This advantage makes it a natural railway center.

Because Denver is so near the great mining region of Colorado, it has become an important distributing center for food, clothing, and mining supplies for the many small mining communities in the mountains. It is a meat-packing city because it is near a stock and grazing region. As coal and valuable minerals are found near by, smelting for the melting and refining of ores, has been developed at Denver. It is also a shipping-center for farm products as well as for minerals from the mines.

Why Salt Lake City is the largest city in the Great Basin. *Salt Lake City* is one of the leading commercial cities in the west-United States. It lies about halfway

between Denver and the Pacific coast. The city was founded a long time before the building of a transcontinental railroad. But the first through line across the continent, the Union Pacific, was built by way of Salt Lake City, and this was an important advantage in its growth.

Great Salt Lake, near which Salt Lake City is located, lies in the lowest part of the Great Basin. All the rivers of the nearby region, therefore, drain into this lake. Although this region is extremely dry, these mountain streams furnish abundant fresh water for irrigation. By this means a wonderfully fertile region has been developed here, and this agricultural and fruit-growing area is another reason for the growth of Salt Lake City, *Provo*, and *Ogden*.

Salt Lake City is a flourishing railway and distributing center, for it receives supplies for the mining towns and ships out products from the surrounding farms. It is an attractive city, lying close to high mountains on the east and only a few miles from Great Salt Lake.

Other cities worth knowing. *Butte*, in southwestern Montana, is the great copper



FIG. 200. A steel works near Pueblo. Colorado is rich in coal and iron ore as well as in gold, silver, and lead. What tries depend on the minerals named? Where would steel made here be used?

city of the United States because it is near one of the most productive copper mines in the country.

Pueblo (Fig. 200) and *Trinidad*, Colo., are both railroad centers, dependent upon mining for their business. *Trinidad* is also a coal-mining city.

Colorado Springs, Colo., and *Phoenix* and *Tucson*, Ariz., are flourishing cities and also well-known health resorts. The healthfulness of these places is due in large part to the light, dry air.

Reno, in Nevada, and *Albuquerque*, in New Mexico, are the leading cities and business centers of those states.

Boise is the capital of Idaho and lies in the center of a rich irrigated district.

Casper, Wyo., owes its present importance to the rich petroleum field of which it is the center.

SOME RELATED PROBLEMS

1. Why do ranchmen brand their cattle? How is it done?
2. Why has the Colorado River so few tributaries in Arizona?

3. Why can people in certain sections of the region live out of doors so much?
4. Why do people traveling with horse-drawn automobiles carry water with them when going through some sections of the states?
5. What are snowplows? Where and how are they used?
6. Find out where snowsheds are built and how they are made.
7. Why is the water from a geyser hot?
8. Why are a dry climate and a high elevation healthful for many people?
9. How have occupations in this region changed from early days up to the present?

SOME THINGS TO DO

1. Collect advertisements from magazines, newspapers, folders and arrange them in groups according to the states famous for scenery.
2. Put a fresh egg into a cupful of fresh water and note that the egg sinks. Now add two or three spoonfuls of salt water to the cup of water and put the egg in it. How does the water of Great Salt Lake differ from that of the Great Lakes? Is it so easy for a swimmer to cross the Great Salt Lake?

THE PACIFIC COAST STATES

STATE	ABBREVIATION	STATE	ABBREVIATION
Washington.....	Wash.	California.....	Calif.
Oregon.....	Oreg.		

WHAT THE MAPS TELL US ABOUT THE PACIFIC COAST STATES

Items:

What reasons can we find from the physical map for the grouping of the cities and towns of these states? (a) Find four sections where cities and towns are numerous. (b) Find out how far the mountain ranges nearest the coast extend inland and give two reasons why few towns or cities are located here. (c) Why are the mountain ranges in east-central California and in central Oregon and Washington so thickly populated? (d) Why are there few cities in the plateau area in eastern Washington and Oregon? (e) Give three reasons for the number of cities in the valleys and along the rivers of Oregon. (f) Give three reasons why the valleys in western Washington are a good place to locate. (g) Give three reasons for the many cities and towns in southern and central California.

What does the industrial map (Fig. 193) of these states show as to the distribution of agricultural products in this section? Select three other maps in this book which will help you to explain this. (a) Find where the following are produced: wheat, citrus fruits, and sheep. (b) Find where the warmest parts of this area are found. (c) On the rainfall map (Fig. 132) find where there is the least rainfall. How may the mountains be helpful in growing crops in the drier parts? (d) Where is the rainfall heavy? (e) Locate the parts that are too rough for farming. (f) Where are there few railroads? (g) Locate sections where most of the people live. (h) Select the cities which depend on the occupations followed by the people on the wooded mountain slopes.

Questions:

1. What states touch this group on the east?
2. Which state in the Union is larger than California? Which state is next in size?
3. How far is San Francisco from Los Angeles?
4. Which has the more favorable coast for commerce, Washington or Oregon?
5. In what direction does the Sierra Nevada extend? the Cascade Range?
6. Locate four mountain peaks of this region.
7. How far is it from the shore line to deep water? (Fig. 130.)
8. What islands are just off the southern coast of California?
9. What river forms the southeastern boundary of California?
10. What city on the Atlantic coast lies nearly east of Portland, Oreg.? (Fig. 133.) What city lies nearly east of San Diego, Calif.? How far apart are these cities?

Essential names and places:

Study the maps, Figs, 114, 130, and 188. Be able to name and locate the following on an unlettered map: three mountain ranges, three valleys, one plateau, four peaks, and four rivers; the three states of this group and their capitals; the following cities: San Francisco, Los Angeles, Portland, Seattle, Tacoma, Spokane, and San Diego.

99. WHERE THE PEOPLE LIVE

SOME THINGS TO LEARN

1. Names and locations of important mountain ranges and valleys of this region.
2. Names of four high peaks of this area.

The mountains and valleys. So large a part of this region is occupied by the high mountains of the Cordilleran Highland that there are only a few lowlands favorable for agriculture and other industries. The cities and the people are mostly in these few areas.

Bordering the coast are the *Coast Ranges*, with but three breaks or passes through which people may reach the interior valleys. Farther inland in California is the *Sierra Nevada*, the northward extension of which is known as the *Cascade Range*.



FIG. 201. A view of Mount Shasta. Mount Shasta is in the Cascade Range. Why is the mountain covered with snow while there is no snow in the valley? In what state is Mount Shasta? Why do the trees in the foreground look so tall?

Between the eastern and western ranges are the broad *California Valley* in the south, and the Willamette and Puget Sound valleys in the north. These are centers of industry and agriculture, and here are found most of the large cities.

The highland areas contain many beautiful valleys and high peaks. Much of this area is covered with forests of large evergreen trees from which much lumber is cut and shipped to other parts of the country. The highest peak in the United States is *Mount Whitney* in the Sierra Nevada of southern California. Among other majestic peaks are *Mount Shasta* (Fig. 201), *Mount Hood*, and *Mount Rainier*.

East of the Sierra Nevada and the Cascade Range the country is very dry, but much of it can be used for dry farming or for farming by irrigation. This is especially true in the *Columbia Plateau*, in which lies much of eastern Washington and Oregon. Where farming is not possible, grazing is carried on, even in some of the mountain areas.

100. WHY AGRICULTURE IS INCREASING

SOME THINGS TO LEARN

1. Why the winters are mild, and the effect of this on plant life.
2. The time of the rainy season and dry season.
3. How water for irrigation is secured.
4. The time of year when irrigation is needed.
5. Why California is a great fruit state.
6. Where wheat is grown, and why.
7. Where grazing is the chief occupation, and why.

The varied climate. The northern Pacific coast region receives most of its rain in the winter, and has a dry summer. The areas with the heaviest rainfall in the United States are on the western slopes of the Cascade Ranges along the Washington and Oregon coasts. West of the higher mountains the winters are warm and thus, owing to the warmth and the rain, this season is the best when vegetation is green. In the summer the landscape is gray or brown.

Along the coast and in the lowland areas of California flowers bloom out of doors

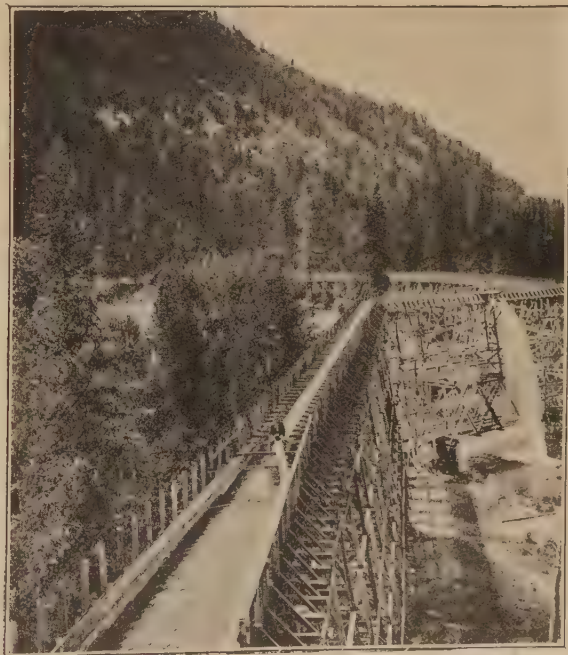


FIG. 202. A scene in the Rogue Valley. Rogue Valley is in southwestern Oregon. What seems to be the chief industry of the people in this valley? Along what river is it? Why can hay be piled or stacked out of doors?

year round. In southern California, and in Florida, it rarely freezes. Hence this region is a favorite winter resort for many people from all parts of the country.

Irrigation can be practiced here. Due to the rainfall and the winter snowfall on the mountains of the western coast, there are many streams to supply water for irrigating crops. By means of irrigation great orchards of apples have been developed in Washington and Oregon (Figs. 202, 203).

Further south in the California Valley and in southern California much of the farming fruit growing depends upon irrigation. **Where field crops thrive best.** The chief crop in this group of states is wheat. Wheat sown in autumn grows all winter and ripens as the dry summer season comes. The Columbia River plains in Oregon and Washington are especially noted for the production of wheat. Four of the ten most important wheat-growing counties of the



Brown Bros.

FIG. 203. An irrigation flume in eastern Washington. This flume is five miles long, and is really a bridge so built that water for irrigation will flow across a deep valley to the farm lands beyond.



Ewing Cal

FIG. 204. Orange groves and snow-capped mountains in southern California. This is a view of San Bernardino Valley and Bernardino Mountains. Irrigation has changed much of this valley from a desert to orange orchards worth thousands of dollars per acre.

United States are found in Washington. Oats and barley also do well in these states.

Where warm-climate crops thrive best. *California* is a land of fruit, for it produces about three-fourths of the oranges grown in the United States, most of the lemons, and large quantities of grapefruit and figs, all of which require a warm climate the year round (Fig. 204). Its climate favors fruit growing, and fruit is raised both to be used fresh and to be canned or dried. It is famous for its raisins made from grapes, for its prunes made from a certain kind of plum, and for canned pears, peaches, plums, and other fruits. From California come also canned vegetables, early fresh vegetables, and cantaloupes.

Where grazing is carried on. Grazing is important in all the highland regions of these states, and in sections where the rainfall is too light to raise crops. The industry is largely confined to sheep raising. Both

California and Oregon rank high in the raising of sheep (Fig. 193).

101. WHY MINING IS IMPORTANT

SOME THINGS TO LEARN

1. Why present gold-mining methods differ from those of early days.
2. Why oil fields are an especial advantage to the Pacific Coast states.

How gold was secured in early days

In 1849 gold was discovered in California. The sand and gravel in the bed of a river were found to contain gold. People rushed to California in great numbers as soon as the news was known. Everyone expected to get rich quickly, by washing the river sand or gravel in a pan or tray until the heavy gold had all settled to the bottom. This method of mining is called placer mining.

Towns were built quickly in the gold regions. People came to run stores

h amusement, and to make money in ways. In a few years the excitement over, and then many people decided to go to other occupations. Thus was made the beginning of a great state. Although *California* leads in gold production, products of its fields and forests are of greater value than those of its mines.

By methods changed. When the river had been used up, men turned to digging the rock that contained gold. But this kind of mining is expensive, and soon mining companies with heavy machinery took the place of the miners, each of whom had worked for himself.

Petroleum a leading product. Within a few years petroleum has been found in *California*, and today this region is one of the richest in the United States, ranking first in oil production (Figs. 79, 193). Much of this oil is used for fuel and power just as it comes from the ground. Many steamships, railway locomotives, and factories use oil in place of coal.

102. OTHER LEADING OCCUPATIONS

SOME THINGS TO LEARN

1. Why manufacturing is becoming more important.
2. Where fishing is a leading industry, and why.
3. Reasons for the importance of the lumber industry.

Why manufacturing is increasing. Manufacturing in these states is making rapid progress. There are several reasons why this is true. In the first place the people are rapidly growing in number and need manufactured goods. It is cheaper to make some of them than to bring them from the East.

Then again the fruits, vegetables, and fish cannot all be used fresh. Some must be canned or preserved for sale later in the season. San Francisco is not far from the sugar plantations of Hawaii. The raw sugar from these islands is refined in cities near San Francisco Bay (Fig. 193).

Power for use in manufacturing can be secured from the mountain streams and from



Fwing Galloway

205. A fish wheel in the Columbia River. As the wheel revolves it scoops the salmon out of the river and deposits them in a small scow or boat alongside the wheel. Many tons are often caught in a single day by one of these wheels. The long lumber train at the right shows the importance of the Columbia River Valley as a gateway through the Cascade Range.



FIG. 206. A lumber yard at Eureka, California. Find Eureka on the map, pages 162-163. The lumber seen in the photograph was sawed from trees cut from the forests on the mountain slopes to the east. What great body of water is so near the distance? What advantage has Eureka for the shipping of lumber?

petroleum. This is fortunate, for these states are poor in coal.

The great fishing industry. The *Columbia River* is the most important place in our country for the catching of salmon, a food fish prized the world over. In the spring, when the salmon go up the streams to deposit their eggs, the great catches are made. The adult fish weigh from ten to seventy-five pounds and are caught with wheels (Fig. 205), hooks, and nets. Some salmon are sold to be eaten fresh, and are usually shipped frozen. More, however, are canned in the many canneries built along the rivers. Salmon are also smoked and exported. The supply of fish is kept up by hatcheries. *Washington* leads the states in the canning of fish.

The lumber industry of the coast. The western slopes of the high mountains of these states are covered with magnificent forests. Some of the largest trees in the world grow here, but they are being rapidly cut to supply

lumber for the eastern states. *Washington* now produces more lumber than any state (Fig. 193). The demand for lumber is steadily increasing, and, as the supply in the eastern states is nearly used up, the West and the West are providing more and more each year (Fig. 206).

103. OTHER FEATURES OF INTEREST

SOME THINGS TO LEARN

1. Why the Yosemite Valley is an attractive place to visit.
2. Three interesting facts about the big cities of California.
3. Why the national government set aside Crater Lake National Park.

The Yosemite Valley. The *Pacific* states, like the Plateau states, are famous for their beautiful scenery. *Sierra Nevada* contain many beautiful valleys and canyons. The most famous is the *Yosemite Valley*. Here are many



Courtesy of Chamber of Commerce, San Francisco

FIG. 207. A view of San Francisco and a part of San Francisco Bay. Note the ferryboats crossing the bay to towns on the opposite side. The ferryboats land at the long building with a tall tower.

g more than 3,000 feet above the valley, magnificent waterfalls, one of which is 1,500 feet to the valley below (Fig. 50). The government has set aside Yosemite National Park, an area of over a thousand square miles, as a national playground.

the biggest trees in the world. One of the most famous features of California is the redwood trees, some of which are over twenty-five feet in diameter and more than three hundred feet high. These trees are the largest and probably the oldest living things in the world. Some of them are over a thousand years old.

lake in the top of a mountain. Another beautiful national park is Crater Lake National Park in the Cascade Range in Oregon. Here lies Crater Lake, sunk over 2,000 feet below the mountain rim. The waters of the deepest blue reflect clearly every object on the sides. On one side one can find deep snow even in the middle of

the summer. This lake is considered one of the most beautiful lakes in the world.

104. LEADING CITIES OF THE WESTERN COAST

SOME THINGS TO LEARN

1. Why San Francisco has become a large city.
2. Three reasons for the growth of Los Angeles.
3. Four reasons why Seattle is a thriving city.
4. Interesting facts concerning the location and growth of five other cities.

San Francisco and the Golden Gate. San Francisco (Fig. 207) has one of the largest and best harbors in the world. It is connected with the ocean by the *Golden Gate*, a strait, or narrow passage, about one mile wide and five miles long. The city is built on a peninsula lying between the Pacific Ocean on the west and San Francisco Bay on the east.

Because of its fine harbor and its location, San Francisco is the chief city of the Pacific coast. Lying at the entrance to the rich



Courtesy of Chamber of Commerce, Seattle

FIG. 208. A Pacific steamship terminal. This terminal is at Seattle, and here steamships from all parts of the world load and unload their cargoes. The building at the left is a canned-salmon warehouse, and the one in the distance a cordage warehouse.

California Valley, it has easy rail connections north and south. Transcontinental roads reach the city from these directions and through passes in the Sierra Nevada to the east. For these reasons San Francisco naturally has grown into a great city and has become our chief trade center with the eastern coast of Asia and with the possessions of the United States in the Pacific Ocean.

Los Angeles: city of sunshine. *Los Angeles*, Calif. (Fig. 20), is now our largest city on the Pacific coast. Its rapid growth during the last twenty years was at first due largely to its fine winter climate, which attracted each year thousands of tourists and health seekers, many of whom now make Los Angeles their permanent home.

Two great transcontinental railroads enter southern California by way of the low passes in the mountains. These two routes of transportation have greatly helped the growth of Los Angeles because they have made it possible easily to ship the fruit of the region to the eastern cities. The fact that the great petroleum fields have been developed near by

has also been of great advantage to the city. Los Angeles is sometimes called the "Capital of the World," because here and in the vicinity many fine motion pictures have been photographed.

Seattle: a great seaport. *Seattle*, Wash., on the shore of *Puget Sound*, has a well-protected harbor (Fig. 208). It is the largest American city lying nearest to Alaska and Asia, and therefore it has built up a great trade with these regions. It is the chief port for all travel and trade to Alaska. Transcontinental lines enter Seattle from the east through the mountain passes.

Seattle is the outlet for the products of the rich *Puget Sound Valley*, and of the *Columbia Valley* and Plateau east of the Cascades. It is also a great lumber market.

The city is located on heights overlooking the Sound, and the mountains are visible beyond. Near by are some of the beautiful peaks of the Cascade Range.

Other cities of importance. *Portland*, Oreg. (Fig. 209), is at the northern end of the fertile *Willamette Valley*, about twelve



Courtesy of Chamber of Commerce, Portland

FIG. 209. The water front at Portland, Oregon. Portland is on the Willamette River. How far is it from the ocean? What gateway through the Cascade Range is east of Portland? What industries center in and about this city? Notice the three-masted vessel on the right. How is such a vessel moved through the water?

from the Columbia River. It is easily reached from the east because it is at the entrance to the *Columbia Gateway*. It is a lumber market and the center of the great salmon-fishing industry on the Columbia River.

Spokane, Wash., is a thriving city in the great district of eastern Washington. It is located at the falls of the *Spokane River* and is important as a flour-milling city. *Coma* is in Washington on the east shore of Puget Sound, and for a long time was a rival of Seattle as the leading city on the Sound.

Oakland, Calif., lies on the east side of San Francisco Bay, opposite San Francisco. It is the western terminus of the transcontinental roads of central California. *San Diego*, in southern California, is a noted health resort and the oldest city in these states.

SOME RELATED PROBLEMS

Why do the people of southern California live out of doors a great deal of the time? Why is it that eastern Washington is noted for wheat, while eastern Oregon is used largely for grazing?

3. Why is California so much more developed than Nevada?
4. Why does California have such a variety of climate?
5. What determined the location of the railroads that enter the Pacific Coast states?
6. How do the mountains help the people of these states?
7. Why is little farming done except in the river valleys?
8. Why is this a good region for forests?

SOME THINGS TO DO

1. Study folders and magazine advertisements to find out what attractions California offers to tourists.
2. Collect pictures which will help you talk about the beautiful scenery in these states. Use post cards, magazines, and newspapers.
3. Make a list of California fruits, either canned or dried. See how many of these you can find in a near-by grocery store.
4. Make a list of the things the people of these states want that they cannot produce themselves. Can any of these needs be supplied from your state?



FIG. 210. A



OUR DISTANT POSSESSIONS

105. WHAT THE GLOBE AND MAPS SHOW

Problems:

- How widely separated are the outlying possessions of the United States? (See World Map, pages 74-75.) (a) Find Alaska in the northwestern part of North America. (b) Look for the Philippine Islands southeast of Asia. (c) Find the Hawaiian Islands near the center of the Pacific Ocean. (d) Find the Samoa Islands lying south of the Hawaiian Islands and the Equator. (e) Find Guam due east from the Philippines. (f) Find Central America, the Caribbean Sea, and the West Indies. Locate the Canal Zone, Porto Rico, and the Virgin Islands (pp. 200-1.)
- How do Alaska, the Philippines, Hawaii, and Porto Rico compare in size with your own state? (a) How long and how wide is your home state? (b) Find out how long and how wide are each of the possessions named. (Use the scale of miles.) (c) Consult the Appendix for the areas.
- Why would you expect the climate of Alaska to be very different from that of Porto Rico or of the Philippines? (a) Find out the distances of these places from the Equator, and compare them (Fig. 97).

Questions:

- What waters border on Alaska?
- What sea separates the Philippines from Asia?
- What countries lie west and north of the Philippines?
- What large bodies of water are connected by the Panama Canal?
- What long chain of islands extends southwest from the coast of Alaska?
- What sea is north of this chain of islands?
- What large continent lies west of Alaska?
- In what direction is Porto Rico from New York City?
- In what large group of islands are Porto Rico and the Virgin Islands?
- How far from San Francisco are the Hawaiian Islands? the Philippines?

Essential names and places:

Be able to locate the following and point them out on the continent maps, or on a globe or world map: Alaska, Philippines, Hawaiian Islands, Guam, Samoa Islands; Juneau, Honolulu, Manila, San Juan; Pribilof Island, Mount McKinley; Yukon River; Bering Sea, Caribbean Sea, South China Sea; East Indies, Japan, China.

106. WHAT MAKES ALASKA VALUABLE

SOME THINGS TO LEARN

- Where Alaska is located.
- Why interior Alaska is cold in winter.
- Why Alaska is only partly explored.
- The name and location of the highest mountain peak in North America.
- Why agriculture is possible in Alaska.
- What products are being grown there.
- Why dairying and stock raising are so successful.
- Where forests abound.
- The importance of Alaska's coal.
- Why mining is a leading industry.
- The kinds of fishing carried on.
- The races of people in Alaska.
- The names and locations of four towns in Alaska.

The location and climate of Alaska.

The territory belonging to our country is not within the borders of the homeland. Of the distant possessions of the United States, Alaska is the nearest and one of the most valuable. This territory is about one-fifth as large as the United States. It is in the northwestern part of North America and lies partly within the Cold Cap around the North Pole. The United States bought Alaska from Russia in 1867 for \$7,200,000. Owing to the climate and the difficulties of traveling, it is as yet only partly explored.

The interior of Alaska is very cold in winter but warm in summer (Fig. 211). Much of the northern part the ground thaws only for a few inches in the short summer months. On the southern coast, however, the

211. Truck gardens near Anchorage, Alaska.

In the valley of the Tanana, mining and farming are important occupations. Where do you think these vegetables are marketed? How are the river valleys of central Alaska protected from cold winds of the Arctic? In all kinds of vegetables be seen in Alaska?



Courtesy of U. S. Geological Survey

Summers are warm and the winters are mild and pleasant. Both in summer and in winter the southwest winds bring much moisture to this coast. In the higher mountains this snow in the winter and does not melt in the summer. Year after year this snow becomes packed into ice which moves slowly in the valleys toward the sea. Such ice masses are called *glaciers* (Fig. 212). Many of these glaciers do not melt before they reach the ocean, where they break up and float away as *icebergs*.

The best-known mountains are *Mount Denali*, which every traveler to Alaska may see from the ocean, and *Mount McKinley* (Fig. 213), the highest mountain in North America.

Agriculture and lumbering in Alaska.

Most of Alaska is too mountainous or has too short a summer for profitable farming. Some of the southern valleys and in those parts of the interior fine grass is found, and dairy-farming and the raising of cattle and reindeer are growing in importance. In the river valleys of the central section hardy vegetables are grown during the short summer (Fig. 211), and berries grow wild in great abundance. Here, too, grain growing is being developed, and a hardy variety of wheat is giving a good yield. Our government has

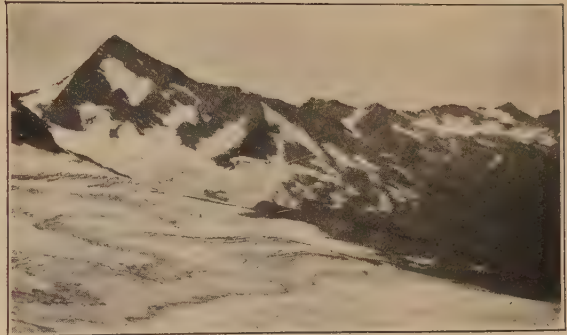


FIG. 212. A glacier in Alaska. There are glaciers on top of a few high mountains in the United States, but in Alaska they often come down to the sea. How do you account for this difference? How do such great masses of ice accumulate? Why are the mountains not all covered with snow?

established agricultural experiment stations which are a great help in all this work.

The higher mountain slopes are covered with ice and snow. On the lower slopes, reached by the moist southwest winds from the ocean, are great forests of evergreens. These forests contain much valuable timber, and lumbering is a growing industry.

The value of Alaska mines. Alaska is best known for its rich gold mines, especially those along the *Yukon River* (Fig. 214). Thousands of prospectors rushed to Alaska when gold was found in the sands of the streams and along the seashore. These early prospectors made Alaska known to the world. They thus started the development of a new, rich land just as did the California prospectors more



FIG. 213. A view of Mount McKinley. This dome-shaped peak rises to a height of 20,300 feet out of the lofty ranges of snow-covered mountains around it. The region surrounding Mount McKinley has been set aside by the government as a national

than seventy years earlier. Placer mining in Alaska is now giving way to the more expensive methods.

Alaska has valuable copper mines, and it is now known that the region is also rich in coal. This is fortunate for both Alaska and the states to the south. The coal is found near the coast and can be shipped to the Pacific Coast states and the islands much more easily than coal can be shipped from the eastern part of our country. Alaska is not entirely dependent on coal for power, for its many streams afford electric power which can be used for light and heat. This is fortunate, for the winter nights in Alaska are long. In some sections the sun is never seen in the middle of the winter.

The value of Alaska fisheries. The streams of Alaska, especially those along the southern coast, abound with salmon, and each year millions of dollars' worth are caught and canned. Cod and halibut are plentiful in the ocean waters, but cod and halibut fishing is of little importance as compared with salmon fishing.

Off the coast of Alaska are the *Pribilof Islands*, the home of the fur seal. Because of the value of seal skins, the seals are being killed off so rapidly that the national government had to pass laws and make agreements with other countries to protect them. After only a few years of protection the seals again became numerous (Fig. 8).

The people and towns of Alaska. The native people of Alaska are mostly Indians who make their living by hunting and fishing. Tribes of Eskimos are found along the Alaskan coast (Fig. 13). Both the Eskimos and the Indians are now learning to make a living by caring for herds of reindeer (Fig. 14).

The chief towns of the territory are the centers of large mining interests. *Fairbanks* in the interior, may be reached by boat in midsummer and by railroad the year round. *Nome* is near *Bering Strait* on the western coast. Owing to the decline in placer mining in Alaska, Nome has gradually decreased in population and importance. *Juneau*, on the southeastern coast, is the capital. It has become a trading center in mining supplies.

pass which leads to the rich gold fields of the upper Yukon is *Skagway*, a growing port and commercial town.

One of the finest scenery in America is on the southern coast of Alaska. The rugged coastline, the deep, narrow inlets of the sea, the beautiful mountains with their perpetual glaciers make a sight always to be remembered.

107. OUR POSSESSIONS IN THE PACIFIC OCEAN

SOME THINGS TO LEARN

The names and locations of our Pacific possessions.

Why these islands have a warm, mild climate.

Why the small islands are important to us. Facts about three types of people in these Pacific islands.

Why the Hawaiian and Philippine islands are of value to us.

The products raised for export in each.

An interesting fact about the chief city in each of our Pacific island possessions.

their size and relative importance. The United States has two large possessions and several small ones in the Pacific. The most important are Hawaii and the Philippines.

Hawaii: the crossroads of the Pacific.

Hawaii is a group of islands in the Pacific about two thousand miles south and west of San Francisco. Owing to their position on the main travel routes, the islands are a calling station for vessels sailing between our country and Asia and Australia. The islands lie in the Hot Belt, nearer the equator than Florida. Although rugged and mountainous, they have much excellent soil.

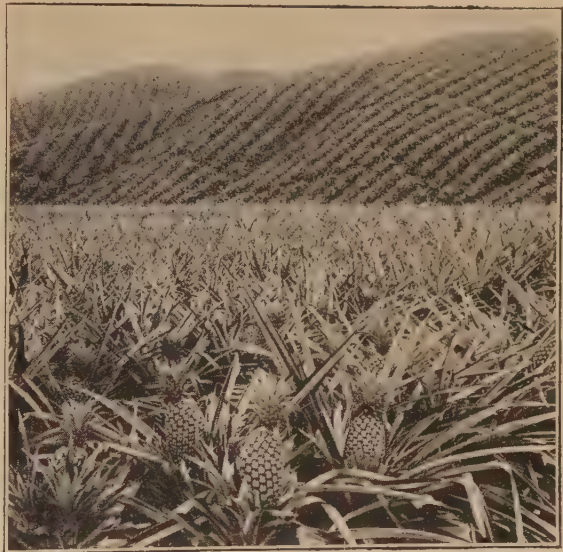
The climate is especially favorable for the raising of sugar cane and pineapples (Fig. 215).

They are shipped to our western coast in exchange for such food materials as flour and meat, and for manufactured products. In the Hawaiian Islands are many Chinese and Japanese, who came originally from



Courtesy of U. S. Geological Survey

FIG. 214. Placer mining in Alaska. A great deal of sand and gravel has been washed at this place. Explain just how the gold is secured. Why must placer mining give way to more expensive methods?



Thompson

FIG. 215. A pineapple field in Hawaii. Where in the United States are pineapples grown? Why do pineapples grow well in Hawaii? What is done with them?

Asia, as well as Americans who settled there after Hawaii became a possession of our country. Agriculture and other industries are being developed rapidly, and the cities have all been made more modern. Now they are like American cities. This means they have electric railways and lights, and pleasant homes. Because of the delightful climate, which changes little during the year



Ewing Galloway

FIG. 216. A country scene in the Philippines.

Carts of this kind drawn by a carabao, or water buffalo, are in common use.

Tobacco leaves are drying on the poles at the right.

Why does the house rest on poles so far above the ground?

Why is it not necessary to build a warmer house?

many people have gone to Hawaii to make their homes. *Honolulu*, the capital, is the chief town and leading port.

Hawaii is famous for its volcanoes. These are great lakes of liquid rock held in by mountain rims. These lakes occasionally boil up and overflow. The liquid rock, or *lava*, flows down the mountain sides and may do a great deal of damage. Every visitor to Hawaii wants to visit these wonder spots.

The Philippines: a rich tropical land. The *Philippines* are a large group of islands about one-third as far from Asia as Hawaii is from the United States. They are even nearer the Equator than Hawaii, and have, therefore, a warm, moist climate (Figs. 18, 216). On the mountains, however, white people can always find comfortable places in which to live.

On the rich soils grow many valuable *Hot Belt* products, including sugar, tobacco, coconuts, and pineapples. A special product is manila fiber, which is used in making rope and twine. Copra, the dried meat of coconuts, is another valuable product. These islands are rich in many kinds of minerals, but as yet little mining is done. Forests of valuable timber are also found.

During the years in which the Philippines have been a United States possession, schools have been established, and the natives have been educated and trained in business.

Roads have been built, and many industries developed. Today the Philippines are helping to supply the needs of many countries. *Manila*, on the island of *Luzon*, is the capital and chief port.

Other Pacific islands. Our other possessions in the Pacific are small islands valuable as cable stations or as harbors. The island of *Tutuila* in the Samoa group is our most important possession in the southern Pacific Ocean. It has a fine harbor.

108. THE VALUE OF OUR CARIBBEAN LANDS

SOME THINGS TO LEARN

1. The names and location of our Caribbean lands.
2. The climate and products of these lands.
3. The importance of the Panama Canal.
4. How and why we came into possession of the Virgin Islands.

Location and climate. On the southern shore of the *Caribbean Sea* (Fig. 119) is the *Canal Zone*. It is a narrow strip of land stretching across the Isthmus of Panama and lying less than 700 miles from the Equator. This strip of land is five miles wide on each side of the Panama Canal.

Across the Caribbean Sea to the east are Porto Rico and the Virgin Islands. They are about 1,300 miles from the Equator.

FIG. 217. The "Belgenland" sailing through the Panama Canal. This United States passenger steamship is starting on a trip around the world. The Panama Canal is deep enough to allow the passage of the largest boats. From which port did this boat sail from New York, in which direction did it sail to reach the canal? To what continents might the ship sail after reaching the Atlantic Ocean?



U. S. Official Photograph

These lands are all well within the Tropics, and therefore have warm weather throughout the year.

The Panama Canal. The small country of Panama occupies the *Isthmus of Panama*. Our government leased the Canal Zone in Panama so that we might dig a ship canal through the isthmus and thus join the Atlantic and the Pacific. The *Panama Canal* was completed in 1914. It is about 50 miles long, and deep enough for the largest ocean-going vessels to pass through (Figs. 98, 217).

By means of this canal vessels save thousands of miles going from the eastern to the western coast of the United States.

Porto Rico. The island of Porto Rico is but one-tenth as large as the state of Maine. Because of the warm climate and the heavy rainfall, the crops are similar to those of Hawaii and the Philippines. Sugar cane, coffee, and tobacco are grown abundantly. Bananas, oranges, and pineapples are also growing crops. Over 70 per cent of the people are white. The principal city and seaport is San Juan. Ocean steamers make weekly trips between Porto Rico and New York City.

The Virgin Islands. This group of islands, known as the Danish West Indies, was

bought by our government from Denmark in 1917 for \$25,000,000. These islands stand guard at one of the gateways to the Caribbean Sea. It is necessary that we control this gateway in order to protect the Panama Canal against attacks in time of war.

SOME RELATED PROBLEMS

1. Why can Alaska be reached from the United States best by steamer?
2. What kind of houses would you expect to find in Hawaii?
3. What kind of clothes would you expect the Porto Ricans to wear? Why?
4. How do pictures of the Philippines show the kind of climate found there?
5. Why is it harder for the natives of Alaska to make a living than it is for the Porto Ricans or Filipinos?
6. Which of our outlying possessions seems most valuable?

SOME THINGS TO DO

1. Make a list of all the different kinds of foods which the distant possessions of the United States could send to us.
2. Select members of your class to represent each of our distant possessions. Dramatize a short story in which each child tells of the land he represents and the customs of the people living there.



FIG. 218. A Map of the



OUR NORTHERN NEIGHBORS

109. WHAT THE MAPS SHOW

Problems:

1. In what ways does the surface of Canada resemble the surface of the United States? (a) What mountains are in the western part? (b) What lesser highlands are in the eastern part? (c) What plains are in the center? (d) In what directions does each of these great surface features extend?
2. Why are Canada's eastern outlets to the ocean better than her western and northern ones? (a) What is the climate of the northern section? (b) Why does this area lack commercial products? (c) Where are the markets for Canada's products? (d) Which ocean is easier to reach from Manitoba, the Atlantic or the Pacific?
3. Why is the St. Lawrence River a better waterway than the Mackenzie? (a) Which is in the warmer region? (b) Which is in the more productive region? (c) Which leads toward great markets?
4. What great waterway does Canada share with the United States? (a) Note where the boundary line of these two countries crosses each lake. (b) Which lake lies for the larger part in Canada? (c) Which lies wholly within the United States?
5. Where would you expect to find most of the railways of Canada, and in what direction would most of them extend?

Questions:

1. What five great lakes are on the border between the United States and Canada?
2. Through what lake farther west does the boundary line pass?
3. In what heat belts is Canada?
4. Name one large island off the eastern coast and one off the western.
5. What five states west of the Great Lakes touch Canada?
6. What country touches Canada at the north-west?
7. What lies to the north of Canada?
8. Between which ones of the Great Lakes is it necessary to have canals?

Essential names and places:

Study the maps, Figs. 114, 130, and 20. Be able to name and point out the following on an outline map of Canada: Coast Mountains, Cascade Range, and Rocky Mountains; Great Central Plain, Arctic Plain, Laurentian Highland; Lake Winnipeg and each of the Great Lakes; Klondike; St. Lawrence, Mackenzie, and Yukon rivers; the cities of Montreal, Quebec, Toronto, Ottawa, Winnipeg, Vancouver, St. John's, Halifax, and Edmonton.

110. CANADA: A LAND OF OPPORTUNITY

SOME THINGS TO LEARN

1. The size and extent of Canada.
2. The names and position of the highlands and lowlands.
3. Why Canada has a varied climate.
4. The location and reasons for fruit and dairy regions.
5. Why the central plains are good for wheat.
6. The location of the grazing region.
7. The extent and value of the forests of Canada.
8. The reason for the barren lands.
9. Where hunting and trapping are important.
10. The location and value of the mining regions.
11. The kinds of manufacturing carried on.
12. Parts of Canada most visited by tourists.
13. Where winter sports are enjoyed.
14. The different peoples of Canada, and where they live.
15. The location and reasons for the growth of Montreal.
16. Why Toronto has become the leading city of southern Canada.
17. Three reasons for the growth of Winnipeg.
18. The location of other cities of importance and an interesting fact about each.

Size, surface, and climate. Canada, little larger than the United States but with only one-twelfth as many people, is a part of the British Empire. It extends from the Atlantic Ocean on the east to the Pacific on the west. It lies north of the United States, and reaches to the Arctic Ocean as far into the North Cold Cap.



FIG. 219. A Canadian wheat field. There are many such fields in Alberta, Saskatchewan, and Manitoba. What makes this a good region for small grain, especially wheat, oats, and barley?

the United States, Canada has a highland in the west and a lesser one in the east. Lying between these highlands are the great central plains and prairies. These features are really the northern extensions of the regions we have learned about in our study of the United States.

Most of Canada lies so far north that it is too cold for agriculture. But the region south of the Great Lakes and the upper part of the *St. Lawrence River* are farther south than some parts of the United States. Sections of Canada do not have a very long winter. In all other parts of the continent, except along the western coast, the winters are extremely cold.

Products of the soil. In the region south of Lake Huron and north of Lake Erie, farming, fruit raising, and dairying are important and successful industries. It is

in this part of Canada that we find most of the dairy people. *Ontario* and *Quebec* lead in dairying and Canada ranks high in the export of cheese.

Southern Ontario has long been famed for its vineyards, and certain districts in *Nova Scotia*, *New Brunswick*, *Ontario*, and *British Columbia* are equally well known for their orchard fruits. Great crops of grain are raised in the south-central part of Canada just as they are to the south in North Dakota and South Dakota. In the vicinity of Winnipeg, *Manitoba*, and in *Saskatchewan* and *Alberta* great quantities of wheat, oats, and barley are grown (Fig. 219). Canada ranks next to the United States in the production of wheat. In this part of Canada the population is increasing rapidly. On the western plains, just east of the Rocky Mountains, are many stock farms, and grazing is carried on extensively (Fig. 220).

Thus we see that the occupations found in the United States extend into Canada as far north as the climate will permit. Agriculture is the leading occupation in all of southern Canada, and in the provinces touching the Atlantic Ocean.

The forest region. Lying north of the agricultural area is a continuous forest which extends as far as a line which might be drawn from the middle of Hudson Bay to the mouth of the *Mackenzie River*. This great northern forest is the home of many fur-bearing animals, and furs worth many millions of dollars are secured here each year. For more than two hundred years hunting and trapping for furs have been profitable occupations in this region. The timber from these vast northern forests will furnish an abundant supply of lumber for many years to come. North of this great forest region no trees will grow, and because of its many small, scrubby bushes, a part of the barren area is known as the "Land of Little Sticks."

The mountain slopes of the western are covered with evergreen forests, and lumbering is the leading industry. The forests of southeastern Canada, like those of New England, produce a great deal of sugar and syrup, which is made by tapping down the sap from the sugar-maple. These forests also furnish great quantities of wood for paper pulp.

The mining and manufacturing industries. Good coal mines are worked both in eastern and in western Canada. In the eastern some iron ore is mined, from which iron and steel are made. Gold is secured in the famous *Klondike* gold fields on the Yukon River just east of Alaska. Copper is mined in the Yukon region and in Quebec and Ontario. Ontario and Quebec both mine nickel and lead, and all the asbestos used in the United States is imported from the mines of Canada.

The region between Lake Huron and the St. Lawrence River is the leading manufacturing area of Canada. The chief articles



FIG. 220. A Canadian stock farm. This is a scene near Calgary, Alberta. Why are there no trees to be seen? Why does a farmer in this region need horses?

221. A view in Yoho
al Park, British Columbia.

s picture shows a tourist
through the Canadian
es.

e the evergreen forests on
opes.

ant Field rises in the back-
1.

you think this would be a
region for trail riding?

w are the roads built and
up?

y would the water in this
n be cold?

ld this stream be used to
h water power?



Courtesy of Dept. of Interior, Canada

anufacture are flour, meat products,
r and cheese, lumber, wood pulp and
boots and shoes, finished leather,
ry products, and railway cars.

Features of special interest. Both eastern
western Canada are much visited by
er tourists because of the beautiful
ry and delightful climate. The Cana-
Rockies (Fig. 221), occupying the west-
art of the country, are famous for their
erful mountain peaks, their many
iful lakes, and their interesting glaciers.
road trip across the country gives a
er a chance to see some of the best of
la's beauty spots.

ater sports in eastern Canada are one
e pleasant features in the life of the
e. Tobogganing, skating, skiing, and
ckey are among the wholesome pas-
of the young people, as they are in
gions with a similar climate in our own
y.

much of northern Canada traveling is
most easily on the rivers. In summer
people travel long distances by canoe
e rivers and lakes. In winter these

ivers and lakes form a snow-covered level
roadway, or trail, which is easily followed on
snowshoes and with dog teams.

The people and their cities. Most of the
people of Canada speak the English language.
Along the lower St. Lawrence, however,
there are many people whose forefathers
were early French explorers and settlers.
Here the people have French customs and
speak the French language. Many Indians
are found in western and northern Canada.
Most of these people make their living by
hunting, trapping, and fishing. The extreme
northern portions of Canada bordering on
the Arctic Ocean are inhabited by a few hardy
Eskimos.

The largest city of Canada is *Montreal*
(Fig. 222) on the St. Lawrence River.
It is easily reached by ocean-going vessels.
Montreal has about as many people as
Pittsburgh, and is the leading river port of
Canada.

Toronto, the second city in size, is in the
region of densest population. Thus it has
become a leading railway center and the
seat of the largest university in Canada.



FIG. 222. The water front at Montreal. Montreal is over eight hundred miles from the ocean. Why is this city a great shipping point? Why is the port not so busy in winter as in summer?

Toronto is located on the north shore of Lake Ontario. It is about the size of Buffalo, and lies just across the lake north of that city.

Quebec, on the St. Lawrence, is an old town of great historic interest, but is not important commercially.

Winnipeg, in Manitoba, is sometimes called the "Gateway to the Northwest." It has become the leading railway center, for it lies on the eastern edge of the great wheat and cattle region and on the southern margin of the great forest and trapping region of Canada. *Winnipeg* lies almost due north of Omaha, and has about the same number of people as that city.

Ottawa (Fig. 223) is the capital of Canada, and a busy center for the lumbering industry. *Vancouver* is the chief city on the west coast, and the western terminus of important transcontinental railroads. *Halifax* has the best harbor on the east coast, and it is the chief coaling station for Great Britain in the Western Hemisphere. It is an Atlantic steamship terminal and is at the eastern end of the great railways that connect the east and west coasts. *Calgary* and *Edmonton* are important and rapidly growing cities in western Canada.

III. NEWFOUNDLAND, LABRADOR, AND GREENLAND

SOME THINGS TO LEARN

1. Why the people of Newfoundland and Labrador are fishermen.
2. The nature of the surface and climate of Greenland.
3. The size of Greenland, and to whom it belongs.
4. Where and how the Eskimos live.

The cod fishermen of Newfoundland

The island of *Newfoundland* is a colony belonging to the British Empire. The narrow strip of coast known as *Labrador* is a part of Quebec. In both these regions the surface is rough and hilly. Some agriculture and lumbering are carried on, but the leading industry of both Newfoundland and Labrador is fishing. The coasts are rugged with many deep-sea inlets which furnish numerous small harbors from which fishermen can set out.

About one-third of the inhabitants are fishermen. The Grand Banks, just off the southeast coast of Newfoundland (Fig. 224) is one of the best places in the world for cod fishing. Herring and lobster are caught here, and the seal fisheries are of some value.



FIG. 223. One of the bridges at Ottawa. Ottawa is a great railway center. On what river is it? Why is it one of Canada's great cities? On the map (Fig. 218) find out how the city is connected with Lake Ontario.

Since early days fishermen from the island, from Europe, and from New England have found here an abundant supply of fish. Fishing for bait to sell to the cod fishermen is an industry in itself. *St. John's* is the capital and the leading city.

The Eskimos of Greenland. Greenland is a mountainous country with most of its surface covered by a great glacier, in many places thousands of feet deep. This country belongs to Denmark, and is almost one-sixth as large as the United States. With the exception of a few Danes, the people for the most part are Eskimos. Permanent settlements are found only along the milder southern coast (Fig. 224).

Greenland has become well known in recent years because so many polar explorers have started from its shores for the great region of the north. It was the Eskimos of Greenland who made it possible for an American to reach the North Pole.

SOME RELATED PROBLEMS

What disadvantages have many of the sea-ports of Canada?
 Why are there so few railroads in western Canada?
 Why is Canada not a good corn country?
 Why is Canada a good grain country?



FIG. 224. A harbor in Greenland. Notice the wharf and storehouse and the vessels at anchor. Why is this a good harbor? In what season was this picture taken? At what season would more people visit it?

5. Why Canada is not so important for its commerce as is the United States.
6. Newfoundland is about as large as Virginia and has but one-eighth as many people. How do you account for this?

SOME THINGS TO DO

1. Collect pictures of Canada, using post cards, magazines, newspapers, and railroad folders. Arrange these under the headings, Scenery, Agricultural Sections, Cities, Miscellaneous.
2. Find out how Peary traveled to reach the North Pole and what other explorers have been there since.



OUR SOUTHERN NEIGHBORS

112. WHAT THE MAPS TELL US

Problems:

1. Why should we expect the countries of this part of the continent to produce a great variety of products? (a) How does distance from the Equator affect temperature? What crops would you expect to find in the areas lying near to the Equator? (b) Study the colors on the physical map to learn of differences in elevation. How does elevation affect temperature? (c) In what portions of these countries would you expect to find crops like those in our country?
2. How does Mexico compare with the United States in size and population? (See Appendix.) (a) Combine the areas of the four largest states of the United States and compare their total area with that of Mexico. (b) What states can you add to or subtract from this total to give nearly the correct area of Mexico?
3. Give some interesting facts you would learn on a trip by boat from New York City to Central America and then to New Orleans: (a) What bodies of water might one pass through, and near what bodies of land? (b) How would the temperature change on the trip? (c) How far would one travel, and in what directions? (d) What might the vessel carry as a cargo?

Questions:

1. What states of our country touch Mexico?
2. What bodies of water border the countries of this part of North America?
3. Name the four largest islands of the West Indies.

Essential names and places:

Study the maps, Figs. 114 and 225. Be sure you are able to name and point out on an outline map the following: Mexico, Yucatan, seven Central American countries, four islands of the West Indies, the Lesser Antilles; Channel of Yucatan, Straits of Florida; Colorado River, Rio Grande; Sierra Madre; Mexico (City), Veracruz, Tampico, Havana, Kingston, and San Juan.

113. MEXICO: OUR NEAREST SPANISH-SPEAKING NEIGHBOR

SOME THINGS TO LEARN

1. The size and surface features of Mexico.
2. Why Mexico has a varied climate.
3. Why the east coast and slopes are wet.
4. Where the densest forests are.
5. Why most of the people live on the plateau.
6. Why so much sisal is produced in Mexico.
7. Why wheat, corn, cattle, and sheep are raised on the Mexican plateau.
8. What the chief mineral products of Mexico are, and where they are found.
9. Why manufacturing is increasing in Mexico.
10. Several interesting facts about the people of Mexico.
11. Why there are many Mexicans in southwestern United States.

Size, surface, and climate. Mexico is the largest and most important of the countries in southern North America. It is about three times the size of Texas and contains about as many people as Pennsylvania and Texas together. The natives are called Mexicans and speak the Spanish language. In Mexico there are thirty states and territories with the federal capital at *Mexico City*.

Mexico lies in the Hot Belt (Fig. 111) and has a hot climate, especially along the coast. Much of the interior is a plateau rising 6,000 feet to 8,000 feet above sea level, with a climate like that of portions of the Temperate Belt. The northern part of the *Mexican Plateau* is extremely dry, like Arizona and New Mexico to the north. Because of the northeast winds, which blow quite steadily over much of Mexico, the east coast is hot, wet, and unhealthful, while the west coast is generally dry (Fig. 115).

Hot Belt agriculture. The coastal areas have Hot Belt vegetation. On the wet lands grow palms, rubber trees, cacao, and trees furnishing cabinet woods such as rosewood and mahogany. The areas with less rainfall produce sugar cane, the vanilla bean, and coffee (Fig. 226).

of the most valuable products of Mexico is the sisal fiber. This is a part of the fleshy leaf of one of the many kinds of plants found in Mexico (Fig. 227). The agave is a form of century plant. The sisal is used especially for making a twine widely used in the United States for tying up bales of grain. Sisal grows best on the plateaus of Yucatan (Fig. 114), and is the principal crop of this section.

Agriculture on the plateaus. Because of the cooler climate on the plateaus, large quantities of wheat and corn are raised there. Horses and cattle grazing is carried on where the land is rough or too dry for crops.

Mining and manufacturing. Above the plateau area in many places rise mountains in which gold and silver are abundant (Fig. 138). Petroleum is found in great quantities in some of the lowlands near the coast of Mexico, especially around Tampico. In fact, much of the petroleum used by the United Nations in the World War came from Mexican oil fields. Many of these fields are owned by Americans and Europeans.

Manufacturing is steadily increasing, due in part to the use of petroleum for power, and in part to the energy of the people of the United States who are furnishing money and directing the work. Cotton goods, leather products, leather goods, straw hats, pottery are among the leading manufactured products.

Features of special interest. A Mexican country house differs greatly from the ones most of us have seen, though many such houses are found in our southwestern states. It is usually one story high and is built around an inner court or yard, with the rooms opening out on the court. The open court are trees and grass, and here the people eat and visit in quiet, away from the noise of the street.

Mexicans, like the Spaniards, from whom they are descended, are fond of wear-



Photograph by Elmendorf, from E. Galloway
FIG. 226. A burro train with coffee in Mexico. There are few railroads and few public highways in most parts of Mexico. Why are two bags of coffee put on each burro? What use is made of the horses?



Publishers Photo Service
FIG. 227. A sisal field in Yucatan. Notice the long leaves that furnish the fiber. How do the sisal farmers of Yucatan help the farmers of our country?

ing bright colors, especially on their many holidays. The men usually wear thick, broad-brimmed felt hats to keep off the intense heat of the sun.

Mexico abounds in beautiful mountains and wild gorges carved in the mountains and plateaus by swift-flowing streams, but the scenery is little known because the most beautiful regions cannot be easily reached.

Mexico has some noted *volcanoes*. Here the volcano is a peak built up around an opening through which steam and melted rock and earth are sent out. Each burst of liquid rock, or each eruption, as it is called, added something to the mass as the melted rock flowed slowly down the slopes until it cooled and become solid. It takes a long



Ewing Gal

FIG. 228. A view of Tampico harbor. Tampico is a leading seaport on the Gulf coast of Mexico. Petroleum is the export. Why do the people wear broad-brimmed hats and light-colored clothes?

time for a great volcano to be built in this way. Volcanoes sometimes appear alone, sometimes in groups. Often they occur on the top of mountain ranges. Two notable volcanoes of Mexico are *Popocatepetl* and *Orizaba*. These great peaks are so high that they are covered with snow the whole year round and present a beautiful and wonderful sight.

The people and their cities. The Spanish explorers found Mexico inhabited by Indian tribes. Many of the early Spanish settlers married native women, and their children were half Spanish and half Indian, or half-breeds, as they are called. The descendants of these early settlers are Mexicans. There are also many Indians in Mexico, as well as a large number of Spaniards and people from both Europe and the United States.

Mexico City, the capital and largest of Mexico, is nearly twice as large as San Francisco. It is located in a beautiful, fertile valley nearly surrounded by mountains. Railroads from the United States extend through Mexico City and on into Central America. *Veracruz* is an important seaport on the Gulf coast. A railway running through a scenic country connects it with Mexico City. *Tampico* (Fig. 228), another Gulf coast port, ships out great quantities of oil. The leading seaport on the Pacific coast is *Mazatlan*.

Guadalajara is the second city in size and lies near the center of the country. It is about as large as Richmond, Va. *Puebla*, near Mexico City, *Monterrey*, and *San Antonio* are other flourishing cities.

CENTRAL AMERICA: A GROUP OF SMALL NATIONS

SOME THINGS TO LEARN

The size, population, and location of Central America.

How the climate determines where the people live in this region.

Why agriculture is the chief industry in Central America.

What would tend to make the people lead an easy life.

What three products from Central America are sent to our country.

How bananas are brought to us.

The nature of the region. Central America is the name given to the region in which lie six small republics, *Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica*, Panama (including the Canal Zone), and *British Honduras*, a small area which is controlled by Great Britain (Fig. 225). The whole area of Central America is not so large as that of the United States. Its population is a little less than that of Ohio.

These countries lie in the Hot Belt (Fig. 111). The northeast winds from the Caribbean Sea bring a heavy rainfall to the windward slopes of the mountains, which are usually covered by dense forests. The winds on this side of the mountains are hot and moist and generally unhealthful (Fig. 115). The greater number of people live on the drier western coast and slopes, where the weather is more healthful.

Land of bananas. The principal industry in Central America is agriculture. The chief exports are agricultural and forest products, such as rubber, dyewoods, mahogany, rosewood, coffee, and bananas. These products thrive only in hot, moist countries. Costa Rica is noted for the fine quality of coffee (Fig. 229).

The best-known product from these small countries is the banana. About two-thirds of the bananas sold in the United States come

from Central America. Bananas are shipped from this region all the year round to New Orleans, Galveston, New York City, and other American ports. They are picked and shipped while they are still green, and they usually arrive at the grocery store in your home town before they are ripe enough to be eaten. Most of the bananas are grown on plantations owned and operated by white men. The laborers on the plantations are largely negroes who have come from the West Indies.

The people and their cities. Most of the inhabitants of Central America are Indians, negroes, and half-breeds who speak the Spanish language. But the number of white people is increasing steadily.

The hot, moist climate causes so many food plants to grow without tillage or cultivation that the natives do not need to work hard to make a living.

The capitals of these countries are the chief cities, and, except for *Guatemala*, they are not so well known as the ports. *Colon* and *Panama* are important cities because of their position at the ends of the Panama Canal. American sanitary methods have improved both of these cities.



FIG. 229. Drying coffee in Costa Rica. Coffee is a profitable crop in Costa Rica. Why is some dry weather necessary in a coffee country?



Courtesy of the Chaparra Agricultural Experiment Station, Cuba

FIG. 230. Ripe cane ready for cutting. After the cane is cut, the tops and the leaves will be cut off and the cane loaded on cars to be taken to the mills. About how tall is this cane?

115. THE WEST INDIES: A LAND OF SUGAR AND TOBACCO

SOME THINGS TO LEARN

1. The two great groups of islands in the West Indies, and their location.
2. How Cuba became an independent nation.
3. Why the West Indies have a heavy rainfall.
4. How sugar cane is raised, and how sugar is made and refined.
5. Why Cuban cigars excel in quality.
6. How sponges are obtained.
7. What are features of special interest in the West Indies.
8. How people of other nations are helping the people of the West Indies to develop their industries.

The nature of the region. The West Indies are made up of two groups of islands which lie between the Atlantic Ocean and the Caribbean Sea. The larger group, extending nearly east and west, is called the *Greater*

Antilles. It includes Cuba, Haiti, P. Rico, and *Jamaica* (Fig. 225). The other group, which is made up of many small islands, extends from Porto Rico almost to the coast of South America, and is known as the *Lesser Antilles*.

Cuba, the largest of these islands, almost as large as Pennsylvania, is sometimes called the "Pearl of the Antilles." At one time it belonged to Spain, but came under the protection of the United States as a result of the Spanish-American War in 1898. In 1902 Cuba became an independent country with a government similar to ours.

The island of Haiti comprises the two small independent countries, of *Haiti* and the *Dominican Republic*. The people of these two republics are almost all negroes. *Jamaica* belongs to Great Britain. Porto Rico and the Virgin Islands belong to the United States. France and Great Britain own most of the other islands of the Lesser Antilles.

North of Cuba lies a large group of islands known as the *Bahamas*. They also belong to Great Britain. *San Salvador*, one of the islands of this group, now known as *Watling Island*, was that part of the New World discovered by Columbus on his first voyage across the Atlantic.

Because the West Indies lie in the tropical belt, the products are similar to those of Mexico and Central America.

Our sugar-producing neighbors. Sugar cane is the leading crop grown in the West Indies. In fact, Cuba alone produces about one-fourth of the world's crop of sugar cane (Fig. 230).

The sugar cane is planted by laying out the stalks in a furrow, or ditch, and covering them with earth. In the West Indies one planting lasts for several years, and a number of crops can be harvested before the field needs to be replanted. Cane sugar is made by boiling down the sweet sap which is pressed out of the sugar-cane stalks.

sugar, as it leaves the mills in the West, is brown and coarse and is called raw, de, sugar. In the larger cities of the United States there are many sugar refineries where the crude sugar is worked over, or refined. After refining, it comes out as fine, granulated or loaf sugar such as we use on our tables.

Other products of the region. The climate and soil of both Cuba and Jamaica (Figs. 231, 232, 233) are suited to the production of the finest cigar tobacco. This tobacco is made into cigars in Cuba and also in the United States, especially at Tampa and Key West, Florida.

The Bahamas produce pineapples, oranges, guava, and grapefruit, all of which are also grown in the West Indies. Sponges, found only in warm waters, are taken from the ocean bed near the shore by skillful divers or by dredge. Sponges have to be cleaned and treated in several ways before they are ready for use.

Features of special interest. In the Lesser Antilles are the two small but interesting islands *Martinique* and *St. Vincent*. In 1902 these islands became world famous because of a series of terrific volcanic explosions which caused a great loss of life and property. The city of *St. Pierre*, Martinique, was entirely destroyed through the eruption of Mont Pelée (Fig. 232), and twenty thousand people lost their lives.

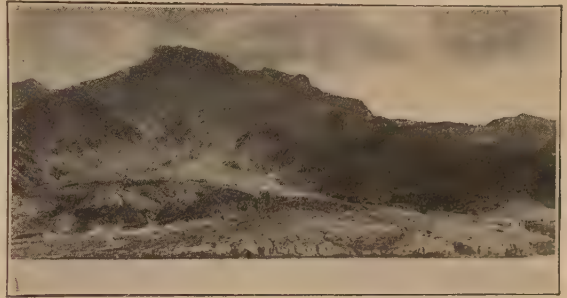
Another of the Lesser Antilles, the island of *Saint Kitts*, is noted for its asphalt lake. It is something like tar or pitch and is used in making good roads. When great quantities of the asphalt are taken from the lake, the holes soon fill again and thus the asphalt is continually renewed. Large quantities of asphalt are shipped to the United States to be used in the making of roads and pavements.

Because of the mild winter climate and the sea breezes, several of the West Indian islands are becoming favorite winter



Publishers Photo Service

FIG. 231. Growing tobacco in Jamaica. Here we see tobacco growing under cheesecloth tents. In this way the finest leaves for the making of cigars are grown. Where is tobacco grown under tents in the United States?



Publishers Photo Service

FIG. 232. Mont Pelée on the island of Martinique. This is a volcano, and the surface of the land is formed of lava that was once liquid rock.



Brown Bros.

FIG. 233. A coastal scene in Jamaica. Why is Jamaica a warm country? How does this picture show that Jamaica has a warm climate? Is it wet or dry here?



FIG. 234. A view of the harbor at Havana. To the wharves and the docks of Havana come large merchant ships from the United States and the commercial countries of Europe, together with smaller ships and boats from the near-by islands of the West Indies. What are some of the things these ships and boats bring to Cuba? What do they take away?

resorts for people from the United States. Winter cruising among the islands has also become popular.

The people and their cities. The people of the West Indies are mostly of Spanish and negro descent. The Americans and people from Europe who have settled in this region are doing much to develop the industries and build up the countries.

Havana (Fig. 234), about the size of New Orleans, is the capital of Cuba and the largest city in the West Indies. It is famous for its cigars and as a tobacco and sugar port. The other commercial and industrial cities are *San Juan*, Porto Rico, *Kingston*, Jamaica, and *Port au Prince*, Haiti. These cities are connected with the United States and Europe by regular steamship lines.

SOME RELATED PROBLEMS

1. At what time of the year would you prefer to go to Mexico?
2. Why do the men in Mexico and Central America wear broad-brimmed hats?

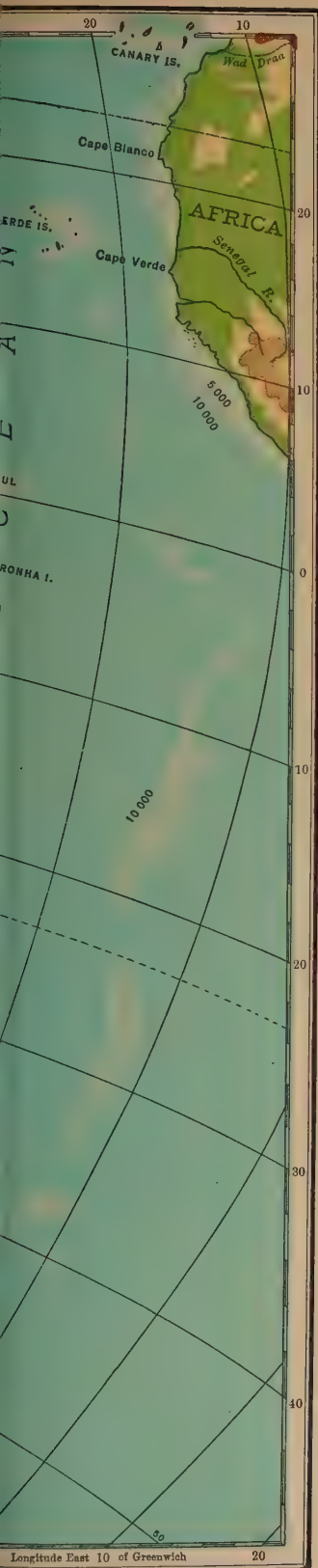
3. In what way do the people of Mexico differ from the farmers of the United States?
4. What can the United States exchange for the products it gets from this region?
5. Why is the capital of Mexico located on the highlands?
6. Where are the best-known cities of Central America located?
7. What is the chief food of the Mexican laborers? How is it prepared?
8. Where is it possible to raise temperate climate crops in the Hot Belt?

SOME THINGS TO DO

1. Write a play which brings in the plant life of Mexico and Cuba. Describe the customs, occupations, and products.
2. Write a short story of an imaginary voyage from the eastern coast over the highlands to the western coast of Mexico.
3. Tell what you saw going from New York to San Francisco by way of the Panama Canal. You stopped at Key West, Havana, Panama, San Diego, and the Catalina Islands.



FIG. 236. A Physical Map of South America



SOUTH AMERICA—THE LATIN AMERICAN CONTINENT

116. WHAT THE RELIEF AND THE PHYSICAL MAPS SHOW Problems:

1. What four maps are likely to prove most useful in beginning the study of a continent? Give one reason why each map helps you.
2. On the physical map locate the mountainous areas of the western, eastern, and northern sections of South America. (a) Locate the highland areas. (b) Trace out four large river systems, giving to each the name of its main stream. (c) Compare the location and direction of the highland and lowland areas of South America with those of North America.
3. What does the rainfall map (Fig. 237) show us about the climate of South America? (a) How does the population map (Fig. 239) show the effects of the climate? (b) What does the rainfall map suggest as to the character of the products? (c) Does the physical map show why there are more people in some areas than in others?
4. Why is the Amazon such a great river? Find how many large tributaries it has. (a) On the physical map trace the drainage divide which separates the Amazon from the two river basins at the north. (b) Trace the divide which separates the Amazon basin from the Plata-Paraná basin. (c) Why are the rivers of the west coast so short? (d) Locate the area of greatest rainfall.
5. Find places in North America that are about as far from the Equator as the following: Lake Titicaca, Patagonia, Mount Aconcagua, and Strait of Magellan. (Use globe or Fig. 97.)
6. Why are the westward-flowing rivers of North America longer than the westward-flowing rivers of South America? (Figs. 114, 236.) (a) Which are nearer the coast, the Andes Mountains or the Sierra Nevada? (b) Which are the higher? (c) Which receive the heavier rainfall on their western slopes?

Questions:

1. What large bodies of water touch South America?
2. In what direction is South America from North America?
3. What islands bridge the way from South America to Florida?
4. Into what ocean do most of the great rivers of the Americas flow?
5. How does the distance from the southern tip of South America to the South Pole compare with the distance from the northern point of Greenland to the North Pole?

Essential names and places:

Study the maps, Figs. 235 and 236. Be able to name and point out the following on an outline map: Andes, Brazilian Highlands, Guiana Highlands; Amazon, Orinoco, and Plata-Paraná rivers; pampas and selvas.



FIG. 237. A rainfall map of South America. What river valley is very nearly covered by the largest black area of heavy rainfall?

117. HOW SOUTH AMERICA COMPARES WITH NORTH AMERICA

SOME THINGS TO LEARN

1. How North America and South America compare in size and shape.
2. The location and names of the greater and lesser highlands in each continent.
3. The names, extent, and direction of the great lowlands in each continent.
4. How the two continents differ as to coast line, climate, and animal life.
5. Why so much of South America has a Hot Belt climate.
6. Some advantages of South America as compared with North America.
7. Some of the disadvantages of South America.
8. Why South America is sometimes spoken of as the "Spanish-American Continent."

Wherein the two continents are alike.

The continents of North America and South America are very nearly the same in size.

South America, like North America, has a high western highland, a lower eastern highland, and a great central lowland, which occupies the remainder of the continent (Fig. 235). The western highland, called the *Andes Mountains*, lies very close to the Pacific Ocean and contains many high peaks.

The eastern highland is a broad, low plateau extending two-thirds of the way westward across the continent. The southern portion is called the *Brazilian Highlands*. North and west of the Brazilian Highlands are the *Guiana Highlands*. Lying between these two divisions of the eastern highland is the wide valley of the *Amazon River* (Fig. 236).

The great central lowland extends north and south almost the full length of the continent. It is drained by several large rivers. The Amazon River, like the St. Lawrence, flows eastward; the *Plata-Paraná*, like the Mississippi, flows southward; and the *Orinoco*, like the Mackenzie, flows northward.

Wherein the two continents differ. Unlike North America, South America has a very regular coast line. It has, therefore, but few good harbors. Neither has South America any large bays like the Gulf of Mexico, Hudson Bay, Gulf of California, and Gulf of St. Lawrence.

While the broadest part of North America lies well to the north of the Equator, the broad northern part of South America is crossed by it. Most of the continent therefore lies in the Hot Belt (Fig. 111). For this reason, a large part of South America has a very hot climate the whole year round (Fig. 237). The hot part of South America is largely forest-covered and inhabited only by native Indians. This is largely because white people have not yet learned how to live in tropical lowlands and keep well and strong. Some day these rich regions may be developed and become very important.

The nations of the world that have made the greatest advances in industry and commerce are found in the Temperate Belt. North America lies mostly in the Temperate Belt, but South America has little land in this Belt. This is one reason why as yet few of the countries of South America are among the leading industrial and commercial nations of the world.

South America also lacks coal, not being so fortunate as North America, which has this fuel in abundance. This is one reason why manufacturing develops slowly in South America.

Because the greater part of South America is in the Hot Belt, the wild animals of this continent are like those of Central America. In the forests within the Hot Belt are great numbers of monkeys. Here, too, are brightly colored humming birds, parrots, and insects. On the higher slopes of the Andes is found the small camel-like animal known as the llama (Fig. 238), which is used for carrying loads, and the alpaca, which is valuable for its hair. The fiercest animals are the jaguar, which is much like the tiger, and the puma, or American lion. None of these animals except the llama is found in North America. On the southern plains lives the large ostrich-like bird known as the rhea. The largest flying bird in the world is the condor, which makes its home on the high slopes of the Andes.

South America, like North America, was settled and developed by people from western and southern Europe. The Spaniards led the exploration, and today many of the people of South America speak Spanish. This is why the continent is sometimes spoken of as the Spanish-American continent.

The early settlers were interested in mining. Later they developed the forest products or engaged in grazing or some form of agriculture. Today the richest and best-developed areas are the agricultural lands, which, just as in North America, many



Ewing Galloway

FIG. 238. A herd of llamas. Notice the Indian driver and his wife and baby. In what way does a llama look like a camel? like a sheep? Why are these animals so useful?

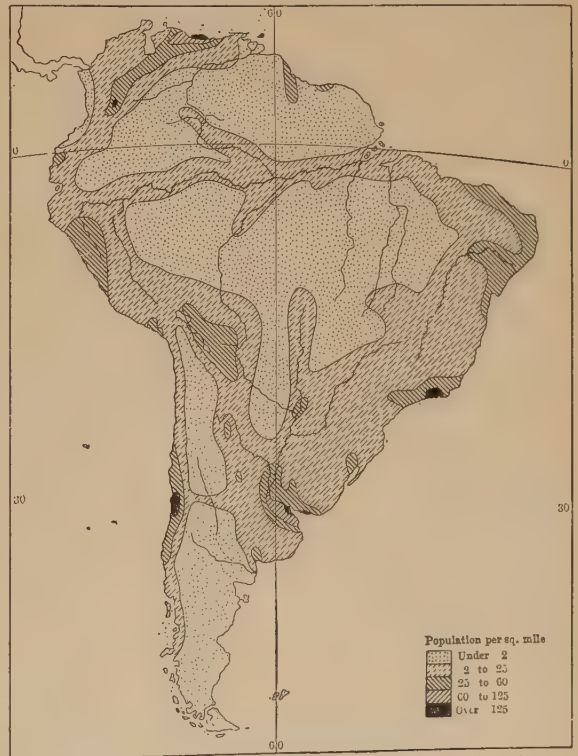


FIG. 239. A population map of South America. What large cities are located in the black areas on the north, the east, and the west coasts?

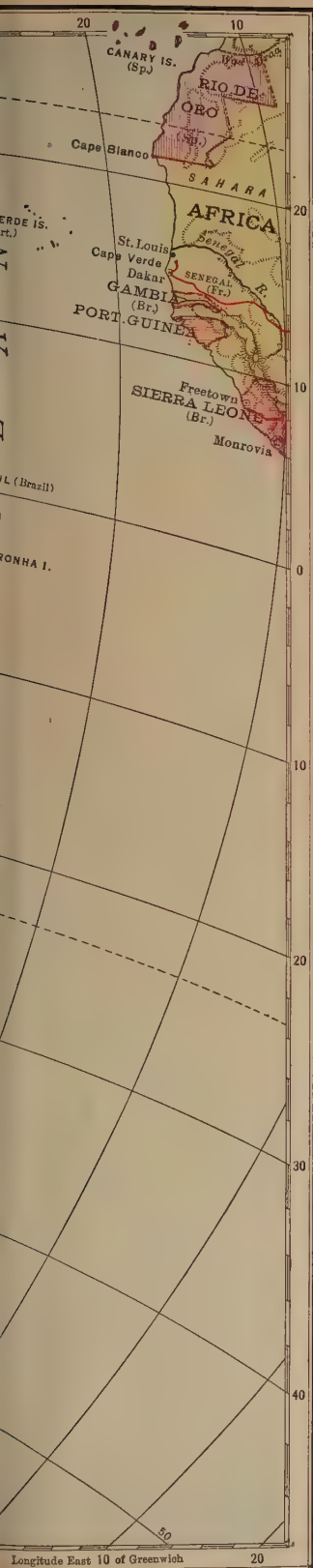
large business and commercial cities have gradually grown up (Fig. 239). The natural resources of South America are very great, hence a number of the countries are rapidly becoming important in international trade.



FIG. 240. A Political Map of South America

118. WHAT THE POLITICAL MAP SHOWS

Problems:



1. If you were to take a trip from your home to Buenos Aires, what route would you follow and what countries would you expect to visit on the way? Why? (a) What kinds of clothing would you carry with you? (b) How would you travel to the port from which you would sail? (c) Over what bodies of water would you sail? (d) What cities might you see on your journey? Why would they interest you? (e) What changes in climate would you find? (f) What new foods would you expect to have on your journey?
2. What interesting experiences might you have on a trip from the Panama Canal down the west coast of South America and up to Cuba? (a) On what oceans would you travel? (b) Through what strait would you pass? (c) What countries would you see and what would the people be doing in each country? (d) What large rivers might your vessel enter? (e) What large islands might you see? (f) Near what important cities would you pass? (g) What goods would you expect to see loaded or unloaded at ports in Chile and Brazil? (h) At what time of year would you prefer to take such a journey?
3. In what ways is Colombia favorably located for trade with other countries? (a) How does the distance between it and the United States compare with that between it and the countries of western Europe? (b) Why is it easy for the people of the west coast of South America to trade with the United States? (c) How do the people of the interior send goods to the ports? (d) By what two river routes may the people in southeastern Colombia reach the ocean?
4. How does distance from the Equator affect the climate of a place? (a) Where on the west coast of North America would you expect to find a climate like that of southern Chile? Why? (b) Why should the climate of Santiago be much like that of Los Angeles? (c) Why should the climate of Montevideo be much like that of Jacksonville?
5. Why is it difficult for us to trade with the people of Bolivia? (a) Would you expect to reach Bolivia more easily from the Atlantic or from the Pacific? (b) Why is it difficult to build railroads from Bolivia to the ocean? (c) How do the people of southeastern Bolivia most easily reach the ocean?
6. Make a list of ten large cities of South America, and name the country in which each is located.
7. Which countries of South America contain no mountains? Which extend into the Amazon Lowland?
8. Which countries of South America have no seacoast? Trace two routes showing how products from each of these countries reach the coast.
9. Arrange the countries of South America according to areas, beginning with the largest. (See Appendix.)

THE HOT OR EQUATORIAL BELT OF SOUTH AMERICA

119. THE AMAZON LOWLAND AND BRAZILIAN HIGHLANDS

SOME THINGS TO LEARN

1. Why the Amazon Lowland has such a dense forest.
2. Why Brazil is a land of great possibilities.
3. Why Brazil produces rubber.
4. How rubber is secured.
5. What makes Brazil a great coffee country.
6. The nature of the coffee fruit, and how coffee is raised.
7. Why Rio de Janeiro is an important city.
8. The names and locations of five other cities.

Brazil: a land rich in possibilities. *Brazil*, a country larger than the United States, is almost entirely in the Hot Belt. That part of the country lying in the great *Amazon Valley* is covered with a dense forest. The forest region yields many valuable products, such as rubber (Figs. 109, 241), Brazil nuts, cabinet woods, and dyewoods. Other important products of the soil are cotton, tobacco, sugar, cacao, and manioc, from which tapioca is made.

Much of the Brazilian Highlands area is covered with grass and is, therefore, a grazing region, and here many cattle, horses, and

sheep are raised. On the highland in south eastern Brazil is located the greatest coffee district in the world.

In addition to the products of the soil Brazil is rich in iron ore and manganese. Some gold, diamonds, and other precious stones are found. The most valuable products, however, come from the soil and the forests. Manufacturing is increasing, but few manufactured products are exported because most of them are needed at home. Cotton manufacturing is developing rapidly. The lumber industry is growing steadily.

Brazil is a new country. On much of this rich land within its boundaries there are but a few people. Untold mineral wealth in the hills and mountains is waiting for the miner. The many streams are ready for the enterprising manufacturer to harness them to his mills. The great grasslands afford enough food for many times the present number of cattle. The Amazon and its tributaries give Brazil 40,000 miles of navigable streams. The country is rich in natural resources that may some day be developed to benefit the country and the world.

Why Brazil produces rubber. Brazil was for a long time the leading rubber-producing country of the world, but today it produces only about one-twentieth of the rubber of the world. Today more rubber comes from the East Indies and the Malay Peninsula where rubber trees have been planted in great numbers. Rubber is still one of the valuable products of Brazil because Brazilian rubber is the best rubber known. In the hot, wet forests of the Amazon Valley several kinds of rubber trees grow wild. These trees do not grow in groves or clumps, but singly. The work of getting the rubber therefore gives employment to many people.

Rubber is secured from the juice of a tree. Gashes are cut in the bark of a tree and small cups are hung there to catch the dripping liquid (Fig. 109).



Courtesy of the University of Pennsylvania

FIG. 241. Brazilian rubber ready for shipment. In Brazil rubber is secured from the wild rubber trees in the great forests along the Amazon.

get the liquid into form for shipping is a long task. A long, round stick is dipped in the liquid and then slowly turned round a fire. This is kept up until a ball six or eight inches thick has been smoked and stuck on the stick (Fig. 241). The ball is then cut open with a large knife and the stick removed.

The balls of rubber are taken to the banks of the Amazon, loaded on large boats, and shipped to the United States and to Europe. Rubber is more important now than ever before because it is used in so many different ways. Automobile tires require a large amount, and much is used for covering wires to carry electricity. Then, too, a great deal is used for clothing and shoes and in many other ways.

Brazil leads the world in coffee. The great coffee region of Brazil is about as far from the Equator as Cuba. Coffee needs a climate which has plenty of rainfall and no frost. While the coffee trees must have a warm climate, too much bright sunshine is harmful, especially to the young trees. In the southeastern part of Brazil, two or three hundred miles back from the steep Atlantic line, the climate, the soil, and the lay of the land are ideal for growing coffee (Fig. 242). Here nearly four-fifths of all the coffee in the world is grown, and there is room to grow many times as much.

The fruit of the coffee tree when ripe is bright red and looks much like a cherry (Fig. 243). When the fleshy covering is removed, two coffee berries are found. The berries must be carefully dried and sorted before they can be shipped to the United States or Europe.

The people and their cities. Although Brazil is larger than the United States, it has less than one-third as many people. A large part of the native population lives in the Amazon Valley. There are many negroes along the eastern coast. Along the southeastern



FIG. 242. Cultivating coffee in Brazil. Coffee grows on small trees. These, like the fruit trees of our country, must be well cared for if good crops are to be secured. What tools are these people using?



FIG. 243. Picking coffee in Brazil. Coffee trees are not tall, so the picking of the fruit is not difficult. How is the fruit of the coffee tree prepared for market? What important crop in this country is picked by hand?

coast and in the highlands near this coast are found many Portuguese, Germans, Italians, and other people who have come from Europe, just as the early settlers in North America did. Portuguese is the national language.

Rio de Janeiro (Fig. 244), commonly called Rio, is the capital and leading commercial city of Brazil. It has more than twice as many people as San Francisco. Rio is a very beautiful city, with a wonderful harbor. It is the second largest city in South America.

Santos is the leading coffee port. *São Salvador* (Bahia) exports coffee, tobacco, and

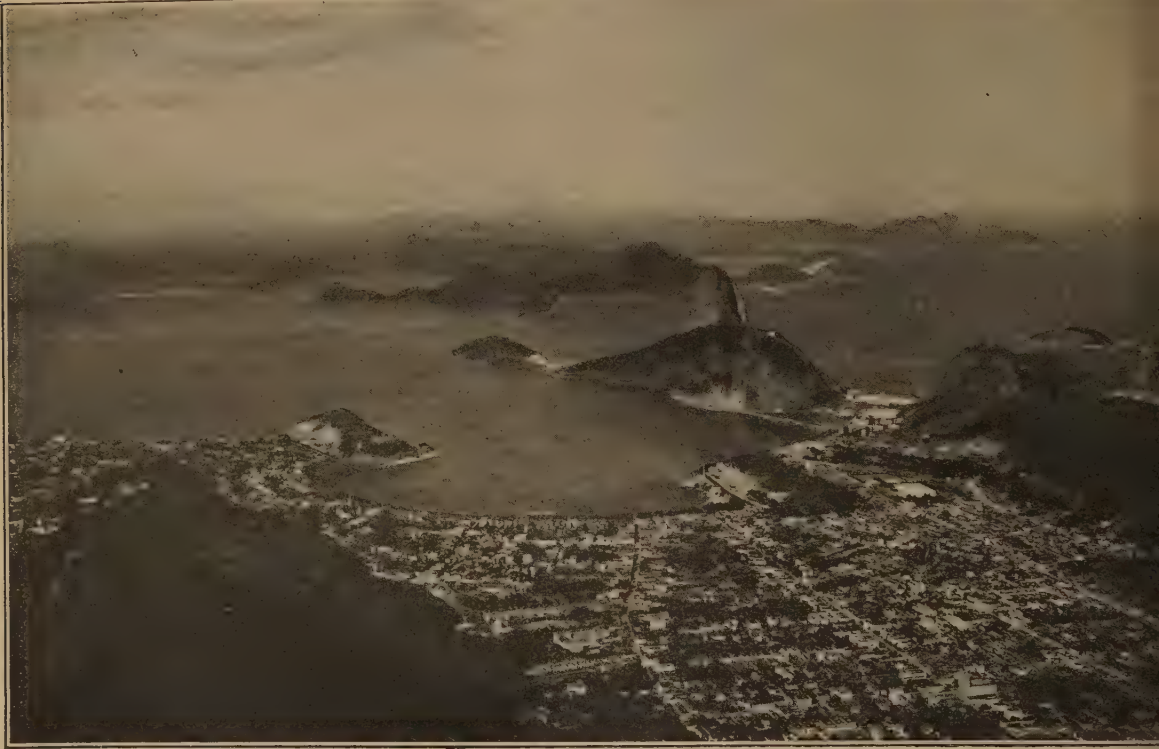


FIG. 244. A view of the harbor at Rio de Janeiro. This city has one of the best harbors along the east coast of South America. To the harbor come ships from all the leading ports of the world. Why is this a good harbor?

tropical timber. *Belem* (Pará) is the center for the rubber trade, and *Recife* (Pernambuco) exports sugar and hides. Another important city is *Manáos*, one thousand miles up the Amazon River, where several tributaries join the main stream. Its location has made it a great center for the collecting and shipping of rubber from the Amazon forests.

SOME RELATED PROBLEMS

1. What made it difficult to explore the lowlands of South America?
2. Why could not the large navigable rivers in the lowlands be easily used?
3. Why was it difficult for early explorers in South America to reach the Pacific Ocean from the east by land routes?
4. Compare the work the farmers of Argentina are doing in January with what farmers are doing in central United States.
5. Why does South America have such a variety of climate?

6. Why do most of the people of Brazil live near the coast?
7. Why are the lands along the lower Amazon not thickly settled?
8. Why should white people prefer to settle in the southern rather than in central Brazil?
9. Give the reasons for the forests and grasslands of South America.
10. Why cannot rubber trees be grown profitably in the United States?
11. Why is the climate of the Amazon Valley good for trees but not good for man?
12. Why is the Mississippi Valley more densely populated than the Amazon Valley?

SOME THINGS TO DO

1. From catalogs, magazines, and newspaper cut pictures of articles made of rubber. Arrange these pictures in two groups:
 - (1) articles made entirely of rubber
 - (2) rubber parts of other articles.
2. Write a short story of your experiences on an imaginary trip up the Amazon River.

120. COUNTRIES OF THE ANDEAN HIGHLANDS

SOME THINGS TO LEARN

1. The nature of the surface and climate of Colombia.
2. How white men first entered the Andean highlands.
3. What Colombia sells to the rest of the world.
4. The reason for the name Ecuador.
5. Why Ecuador is called "a land of volcanoes."
6. How the climate of Ecuador varies.
7. Who the Incas were.
8. Why the early Spanish explorers mistreated the Incas.
9. How the Incas were able to farm the dry plateaus.

Colombia: the northern gateway to the Andes. *Colombia* is the northernmost country of the Andean highlands. The Pacific borders the western coast and the Caribbean Sea the northern coast. The western part of Colombia is very mountainous, but the eastern part lies in the lowlands of the Amazon and the Orinoco. The lowlands are hot, wet, and unhealthy. The highlands and highland valleys are cooler and therefore contain most of the people. The *Magdalena* (Fig. 245) is the chief river of the mountain area. It is longer than the Colorado, and is navigable for hundreds of miles. It was by this water route that the white men first entered the northern Andean highlands.

Colombia has not quite so many people as the state of Ohio, but is more than ten times as large. The people produce more coffee, cacao, sugar, and bananas than they need for their own use (Fig. 246). They also export tropical woods and medicinal plants. Much of their surplus goes to the United States, in return for cotton goods, flour, and petroleum. *Bogotá* is the capital and largest city. It is located near the center of the country on a plateau a mile and a half above sea level. This gives the city a mild, pleasant climate,



Publishers Photo Service

FIG. 245. Scene on the Magdalena River of Colombia. On what rivers in the United States are boats similar to these used? Why?



Brown Bros.

FIG. 246. Native huts at Buenaventura. This town on the west coast of Colombia is the trade center of a district that produces coffee, cacao, and lumber for export. Why do the houses have steep roofs? With what are the roofs covered?

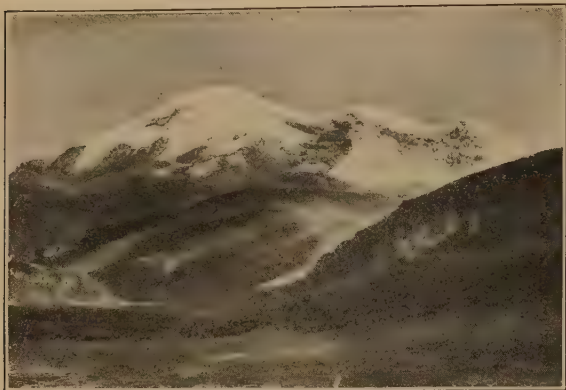


Brown Bros.

FIG. 247. A canoe used by natives of Colombia. This picture was taken on the Magdalena River, near Barranquilla. The natives or Indians use their canoes to bring produce to the city. From what do you think this canoe was made?

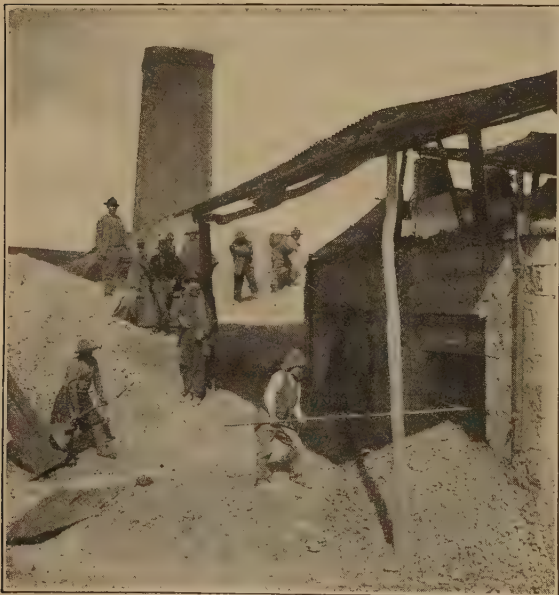
although it is near the Equator. *Barranquilla*, near the mouth of the Magdalena River, is the leading trade center.

Ecuador: a land of volcanoes. *Ecuador* is so named because it is crossed by the Equator. It has nearly as many people as Iowa, but its area is almost twice as great.



Courtesy of the International Bureau of American Republics

FIG. 248. A view of Mount Chimborazo, Ecuador. This mountain is much higher than any in the United States. Where is it? Why is the mountain top covered with snow? What do people do to make a living in such a high region?



Copyright by Underwood & Underwood, N. Y.

FIG. 249. A copper mine in Peru. Mining and smelting by the people of Peru often is not carried on with modern machinery. Compare this scene with pictures of mining and smelting in our country.

There are a number of volcanoes in Ecuador, of which *Chimborazo* (Fig. 248) and *Cotopaxi* are the most noted. *Chimborazo* is a little higher than Mount McKinley in Alaska.

The coast north of the Equator has plenty of rainfall, but south of it the coast is very dry. The chief product is cacao, of which Ecuador produces about one-fifth of the world's crop. Panama hats and cacao are

the leading exports. Vegetable ivory, used in making buttons, is also exported.

Up in the highlands of Ecuador, nearly 10,000 feet above the sea, is *Quito*, the capital. This city is only sixteen miles from the Equator, and stands in the very shadow of a snow-crowned volcano. In fact, as many as eight snow-capped volcanic peaks are in plain sight from this equatorial city.

The chief seaport is *Guayaquil*, which has a good harbor. It was formerly one of the most unhealthful cities in the world, but through the work of engineers and doctors from the United States the city has been made clean and healthful.

Peru and Bolivia: the former home of the Incas. When white men first came to Peru soon after Columbus discovered America they found there a very interesting people. They were wealthy, they had cities, they did some manufacturing, and they knew how to farm so as to raise good crops. These people were the Incas. They had built great fortresses and temples, and had an excellent government. The native people of Peru and Bolivia today are descendants of the Incas.

The home of the Incas was on the broad plateaus of the central Andes. This region has a dry, cool climate, and crops were raised successfully only where irrigation was carried on. The Incas mined copper, gold, silver, and tin. Because of their riches they were shamefully plundered and mistreated by the early Spanish explorers and settlers.

Today the people in this region carry on industries similar to those of the Incas. They produce more tin, copper (Fig. 249), silver, cotton, alpaca, and wool than they need. These things they exchange with other peoples for cotton goods, foodstuffs, and mining machinery (Fig. 250).

The southern coast of Peru is very dry and here are valuable deposits of nitrates which form a leading export, as they do in the similar climatic region of Chile.

The capital and chief city of Peru is *Lima*. It is about seven miles from the sea, and is a little more than half as large as Kansas City, Mo. The leading commercial city is *Callao*, the seaport of Lima, with which it is connected by water and rail.

La Paz is the capital of Bolivia. It is situated on the high *Plateau of Bolivia* near the shore of *Lake Titicaca*. This is the highest navigable lake in the world. It lies almost as high as the top of *Pikes Peak*.

THE COUNTRIES OF THE ORINOCO LOWLAND AND GUIANA HIGHLANDS

SOME THINGS TO LEARN

1. Facts about the highlands and lowlands of Venezuela.
2. What European nations have colonies in Guiana.
3. Why the Guianas contain few people.
4. The cause of the llanos.
5. The chief products of the Guianas.

Venezuela: our nearest South American neighbor. Venezuela is nearly as large as Colombia but has not quite so many people as the city of Chicago. The western part of the country lies in the Andean highland, the central portion in the Orinoco lowland, and the eastern part in the Guiana Highlands. The Orinoco lowland has one wet and one dry season each year, and as a result the region is a country of great grasslands. These grasslands are called *llanos*. On the *llanos* many cattle are raised. The mountain region along the northern coast is important for the production of coffee and cacao, grown principally on the highlands near *Caracas* (Fig. 251), the capital city.

Caracas, also the chief city, is only five miles from the ocean, but is more than 3,000 feet above sea level. To connect the city with its harbor and shipping it has been necessary to construct a railroad twenty-five miles long from the coast.

The Guianas: the only colonies in South America. The Guianas, together, are a little



Ewing Galloway

FIG. 250. The highest railroad bridge in the world. This railroad is in the Andes Mountains in Peru. Over it is carried on trade and travel between the high plateau and the coast cities. How do you explain why there is so much snow close to the Equator?



Publishers Photo Service

FIG. 251. A bird's-eye view of Caracas. Compare the buildings in Caracas with those of New York City or Chicago. Why are there no tall buildings? Why are trees found on the higher slopes of the mountains?

larger than California, and have a few less people than Washington, D.C. The western portion of this area, known as *British Guiana* (Fig. 240), is controlled by Great Britain. The middle portion known as *Dutch Guiana*, belongs to the Netherlands, and the eastern part, *French Guiana*, to France.



From *Jungle Island*. Courtesy of W. C. Allee

FIG. 252. An anteater in a tropical jungle. The anteater is one of the strange animals found in Central and South America. See if you can find out how it secures its food.



Ewing Galloway

FIG. 253. A view of Iguassú Falls. These falls are in the Iguassú River, a branch of the Paraná, between Brazil and Argentina. This is one of the most beautiful falls in the world. How do falls in a river affect its usefulness?



By Burton Holmes, from E. Galloway

FIG. 254. Sheep in the stock yards at Buenos Aires. The ranchers have brought the sheep to the city from the rich pasture land in the vicinity of Buenos Aires. To what country may they be shipped? In what part of our country might you find a sheep picture similar to this?

The larger part of the Guianas is a coastal lowland and is very thinly populated. This is partly because the climate is hot, wet, and unhealthful; partly because the country can be entered only by way of the rivers, and these have falls in them; and partly because the interior is inhabited by wild Indian tribes.

The most important product shipped out of the Guianas is sugar, which is produced only on the coastal lowlands. Other products are coffee, cacao, and rice. Gold is also exported. The chief cities are *Georgetown*, *Paramaribo*, and *Cayenne*.

THE TEMPERATE BELT OF SOUTH AMERICA

122. THE PLATA-PARANÁ PLAIN

SOME THINGS TO LEARN

1. The nature of the surface of Argentina.
2. Why Argentina is so favorable for agriculture.
3. What people are helping to develop the country.
4. Six facts about Buenos Aires.
5. The occupations of the people of Paraguay and Uruguay.
6. Four interesting facts about Montevideo.

Argentina: one of the most progressive countries of South America. The western boundary of *Argentina* is the crest of the Andes Mountains. The highest mountain peak in the Western Hemisphere, *Mount Aconcagua*, is near the western border of Argentina. Because of the high mountain wall at the west the country slopes eastward and is drained largely by the Plata-Paraná river system (Fig. 253). Much of Argentina is an almost level plain which stretches from the northern boundary nearly to the southern end of the continent. The central portion of this plain is a great grassland called the *pampa*. It has a climate like that of eastern Kansas but not quite so cold in winter. Because southern South America

s in the Southern Hemisphere, winters there come in the months when we are having summer. The pampa region is the most important part of Argentina.

Next to Brazil, Argentina is the largest and richest country of South America. While it is a little more than one-third as large as the United States, it has fewer people than the state of New York. Most of the immigrants to Argentina come from Italy and Spain. They are helping to develop the country, much as our ancestors helped develop North America in the last century.

Because Argentina lies almost entirely within the Temperate Belt, conditions there are favorable for agriculture and grazing.

On account of the light rainfall, the western part of the pampa is a grazing region (Fig. 254). The eastern portion has enough rainfall for farming. Since it is easy to turn grassland into farms, wheat, corn, oats, and flax are grown here, but sheep and cattle are still raised in the western portion.

Argentina's chief industry is agriculture, and agricultural products are exchanged for petroleum products and manufactured goods from the United States and Europe. The chief exports are wool, hides, skins, linseed, quebracho, and frozen meats to Europe. Our trade with this country is not so great as it is with Brazil because Argentina and the United States raise about the same crops.

Owing to its rich soils, its rapid development as a nation, and its great stretches of level land, Argentina has more railways than any other South American country.

Buenos Aires (Fig. 255), with almost as many people as Philadelphia, is the largest city south of the Equator and one of the world's most beautiful cities. It is located on the La Plata, and is a railway center and the chief port. Buenos Aires exports more frozen meat than any other city in the world (Fig. 254). Some manufacturing is done here. The most important articles made are cotton cloth and furniture.



Publishers Photo Service

FIG. 255. The capitol at Buenos Aires, Argentina. The capitol is the large building in the center. Have you ever seen a picture of a building in our country that reminds you of this building? Where is it situated? In what ways are the buildings alike?

Uruguay and Paraguay: the two smallest countries of South America. *Uruguay*, a little larger than Missouri, and *Paraguay*, about the size of Georgia, are both small grazing countries. Paraguay has about one million people and Uruguay half as many more. Plains, with here and there a low mountain ridge, cover most of both countries. The climate is mild, and the southeast winds bring plenty of rainfall. In each of these countries farming is being carried on more and more. The products which the people have for trade are wool, hides, meat, and meat extracts. One of the special crops of Paraguay is yerba maté, or Paraguay tea, which is sent in considerable quantities to other countries of South America. Paraguay tea is a sweet-tasting herb which is used extensively in South America instead of the kind of tea used in our country. Oranges grow in great abundance in Paraguay, so plentifully, in fact, that large quantities of them are often fed to live stock.

Montevideo (Fig. 256), the capital of Uruguay, is a leading city of South America. It is not quite so large as Minneapolis and contains about one-third of all the people of the country. In Uruguay it is everyone's ambition sometime to live in Montevideo. This city is an important meat-packing center, and ships meat, hides, beef extract, and

wool to Europe and the United States in exchange for cotton goods, clothing, machinery, and foodstuffs.

Asuncion is located in Paraguay on the Paraná River at the junction of two large streams. It is the capital of the country and is about one-fourth as large as Montevideo. *Asuncion* is connected with the sea both by rail and by river. Thus it is well situated for both foreign and interior trade.

123. COUNTRIES OF THE ANDEAN HIGHLAND

SOME THINGS TO LEARN

1. In what way Chile is like California, and in what ways it is not.
2. How central and northern Chile help one another.
3. What nitrate is, where it is found, and what it is good for.
4. Seven interesting facts about the southern extremity of South America.
5. Why Cape Horn is interesting to us.

Chile: the California of South America. *Chile* is a long, narrow country, stretching along the western coast of South America a greater distance than from Alaska to Mexico. Mountains extend throughout the whole length of Chile, but near the middle of the country there are rich valleys. At the southern end of Chile the Andes stand close to the ocean with only their summits out of the water. This makes a very irregular coast fringed with hundreds of small islands.

The northern part of Chile is a dry desert and the southern part is wet and rainy. In middle Chile, where most of the people live, the climate is much like that of California, but the seasons are just the opposite. Here the weather is mild the whole year round with most of the rain coming in June, July, and August, the winter months in countries south of the Equator.

How middle and northern Chile work together. The dry northern part of Chile is widely known for its nitrate deposits



Copyright by E. Newman

FIG. 256. A portion of the water front at Montevideo. Montevideo is said to be one of the cleanest cities in the world. It carries on a large export trade with the United States and Europe.



Brown Bros.

FIG. 257. A view of Valparaíso and its harbor. How is this harbor like and unlike other harbors you have seen in pictures? Where are the taller buildings? Why? Where do you think most of the people live in Valparaíso? Why?

Nitrate is a salt, commonly known as Chile saltpeter. It is found in a region once covered with water in which great quantities of the nitrate salt were dissolved. As time passed, the region became so dry that the water evaporated and the salt was left. The men who operate the nitrate mines must pay the Chilean government a high tax on the nitrate they ship out of the country. These taxes are used for improvements all over the country. Thus all the people of Chile are benefited by the nitrate workers in the northern part.

Because the nitrate region is dry and unproductive, the workers here must have food, clothing, also water, horses, mules, hay, and machinery brought to them, for these things cannot be found in this part of Chile. The people in the well-watered part of the country are kept busy supplying these needs. Nitrate or saltpeter is used chiefly as a fertilizer in many farming regions of Europe and in some parts of the United States. In return for the nitrate, we send to Chile unbleached cotton cloth, gas and fuel oil, automobiles, railway material, and copper wire.

In the fertile valleys of Chile all the fruits and grains of the Temperate Belt are grown, grapes doing especially well. Copper and coal are mined here. In southern Chile sheep grazing is carried on, and wool and frozen mutton are shipped from *Punta Arenas*. Farther north, cattle and horses are raised. The factories of Chile supply flour and clothing, and the leather industry is growing rapidly, but the products are not exported.

The people and their cities. The population of Chile is not quite so great as that of California, although its area is almost equal to that of our three Pacific states. About four-fifths of the people live in the central part of the country. The Chileans are an enterprising and progressive people. They are proud of their country and their fine cities. In this respect they like to compare Chile with the United States. The language spoken in Chile is Spanish.

Valparaíso (Fig. 257), with a population about as large as Omaha, is the leading seaport and commercial city on the western coast of South America. It has a large



Publishers Photo Service

FIG. 258. Some Indians of southern South America. These natives live in Patagonia, a part of southern Argentina. The Patagonians are much like the Indians of Tierra del Fuego in habits and customs. Is southern South America a cold or warm region? What are these people using for clothes?

and well-protected harbor which has been improved so that vessels may enter it easily. A railroad has been built over the Andes connecting Valparaiso with Buenos Aires, and thus travel and trade between the eastern and western coasts of the continent have been made easier.

Santiago, the capital of Chile, is about as large as Washington, D.C. It is situated in a rich irrigated plain, and is connected by rail with the seaport Valparaiso.

Iquique, in northern Chile, is the leading city for the export of nitrates. The area in which the city is situated is so dry that the water supply must be brought from the mountains through a large pipe or aqueduct.

The southern extremity of South America is the island *Tierra del Fuego*, owned partly by Chile and partly by Argentina (Fig. 258). The southern point of this island is *Cape Horn*. Cape Horn is a dangerous cape around which all sailing vessels between our eastern coast and California used to sail. Tierra del Fuego is separated from the mainland by the well-known *Strait of Magellan*.

This strait was named in honor of the Portuguese explorer Magellan, who found this passageway on his historic voyage the first trip around the world. This passage is used by steamboats, but is too dangerous for sailing vessels because of the strong westerly winds in this part of the world. Punta Arenas, in southern Chile on the shore of the Strait of Magellan, is visited by many vessels passing through the strait.

SOME RELATED PROBLEMS

1. In and near what cities of the United States would one find important meat-packing industries similar to those of Buenos Aires and Montevideo?
2. Why is North America more densely populated than South America?
3. Give three reasons why the coldest lands of North America and the hottest lands of South America are so thinly populated.
4. Why does Argentina ship more wheat to Brazil than to the United States?
5. Give three reasons why Buenos Aires has become a great city.
6. Why is the horse such a useful animal in Argentina?
7. Why is our trade with Brazil greater than it is with Argentina?
8. What country in Central America was formerly a part of Colombia? Why did it become independent?
9. Why does it not pay to send oranges from Paraguay to the United States?

SOME THINGS TO DO

1. Trace on the map the route that you would take in going from Rio de Janeiro to Santiago; Rio de Janeiro to Asuncion; Manáos to Guayaquil; Buenos Aires to San Francisco.
2. Write a story of a coastwise trip on a steamship from Bering Strait to Cape Horn, telling what you have learned of the changes in temperature, rainfall, vegetation, and occupations of the people.
3. Make six stops on this coastwise trip, and tell two interesting facts about each.

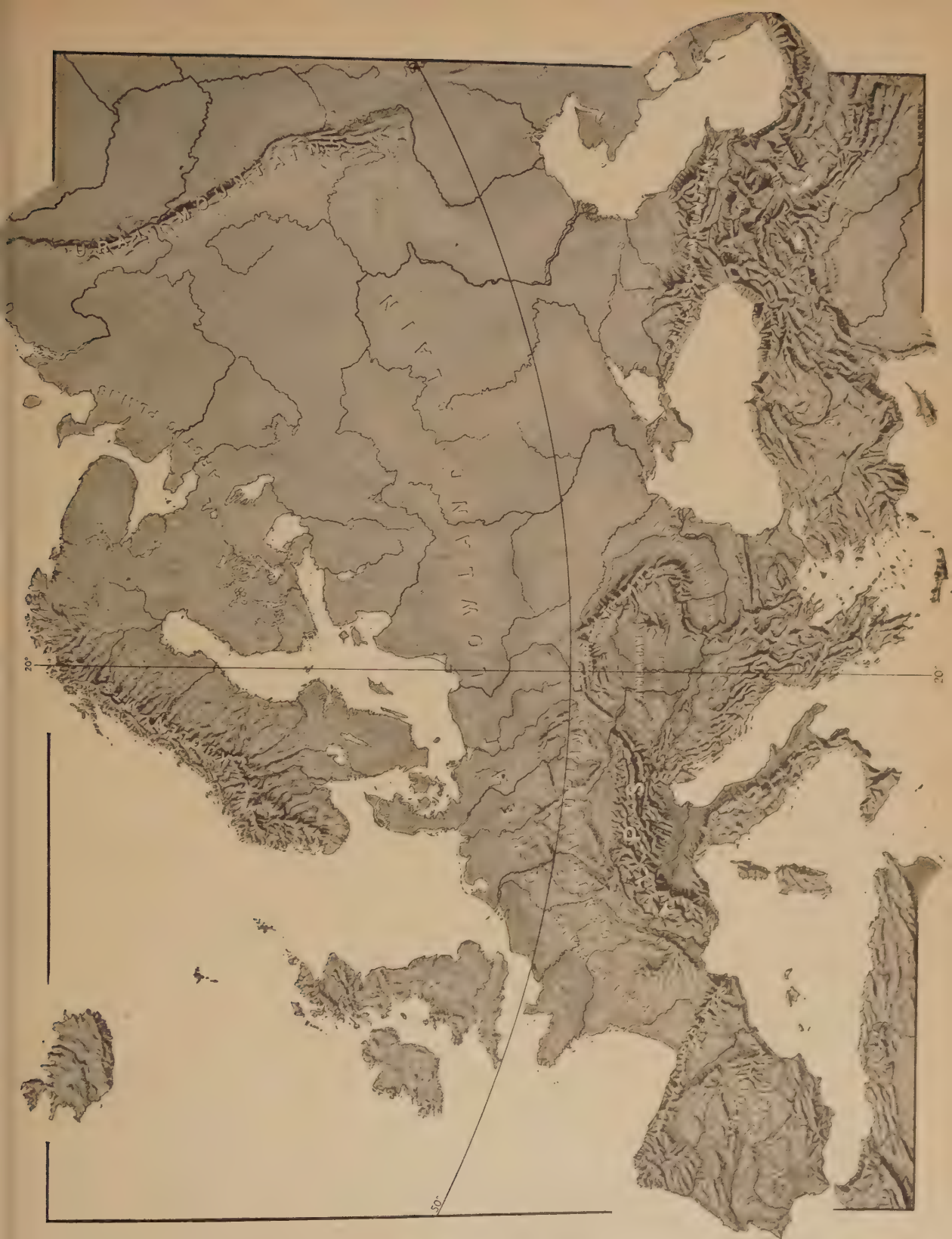


FIG. 259. A Relief Map of Europe





EUROPE—THE CONTINENT OF OUR ANCESTORS

124. WHAT THE RELIEF AND THE PHYSICAL MAPS SHOW

Problems:

1. Why are the Iberian, Italian, and Scandinavian peninsulas not easily reached from central Europe? (a) What waters separate the Iberian Peninsula from Africa? (b) What waters lie west and north of the Iberian Peninsula? (c) What mountains northeast of this peninsula? (d) What waters nearly surround the Scandinavian Peninsula? (e) What waters nearly surround the Italian Peninsula? (f) What important mountains are between this peninsula and the rest of Europe?
2. Wherein is the surface of Europe similar to that of North America and South America, and wherein is it different? (a) Show that each continent has a great central plain, but that the plains do not have the same direction in all the continents (Figs. 259, 260). (b) Find the greater and lesser highlands in each, and compare their locations and directions. (c) Make a list of the countries that are partly or wholly in the Great Central Plain in each continent. (d) List those in the region of the greater highlands.
3. Before the days of railroads how was trade mostly carried on in Europe? (a) What rivers of the continent probably were used in this trade? (b) What were used besides boats for carrying goods? (c) Make a list of twelve European rivers. (d) Name the bodies of water into which each flows. (e) What areas are reached by each of these rivers?
4. Why could not old Russia trade easily with people in America? (a) Why are the White Sea and the Arctic Ocean of little value as trade routes? (b) How can a vessel reach the ocean from the Black Sea? (c) Why is the Caspian Sea not as useful as the Black Sea? (d) What rivers can be used in trade in Central Europe?

5. How did the making of the Suez Canal help Europe in its trade with the countries of southern and southeastern Asia? (a) Use the map of the world (Fig. 97) to show two or three other possible routes. (b) Use the scale of miles to show that the Suez route is the shortest one to India from London, from Lisbon, and from Marseille.
6. Why is a tourist able to see so much more of Europe than of our own country? (a) Find the total distance one would need to travel on a trip starting from the Grampians and taking in the following points (Fig. 260): Pyrenees, Mont Blanc, Mount Vesuvius, Mount Etna, Isthmus of Corinth, Bosphorus, Mount Elbruz, Mount Telpo, North Cape, Dovrefjeld, Cheviot Hills. (b) Find the total distance for this American trip (Fig. 130): from Mount Washington, to Niagara Falls, Mount Mitchell, Pikes Peak, Grand Canyon, Yosemite Valley, Mount Shasta, Mount Rainier, Yellowstone Lake, Itasca Lake, Straits of Mackinac, Adirondacks, Cape Cod.

Questions:

1. Name two oceans and six seas that touch Europe.
2. What is Europe's rank in size among the seven continents? (See Appendix.)
3. In what direction would you travel in going from New York City to London?
4. Find four large rivers that have their sources close together in central Europe. In what highland area is this?
5. Into what body of water does each flow?

Essential names and places:

Study the maps, Figs. 259 and 260. Be able to point out and name the following on an unlettered map of Europe: Pyrenees, Alps, Caucasus, and Ural mountains, Valdai Hills, Mont Blanc, Mount Etna, and Mount Vesuvius; Po, Rhine, Rhone, Danube, Volga, Elbe, Vistula, Seine, and Ural rivers; North, Baltic, Mediterranean, Black, and Caspian seas; the straits of Gibraltar and Dover, and the Dardanelles.

125. WHY EUROPE CONTAINS MANY LEADING NATIONS

SOME THINGS TO LEARN

1. Why we may speak of Europe as the "Land of Our Ancestors."
2. How the location of Europe has helped the several nations to become commercial countries.
3. The large surface features of Europe.
4. How the climate of Europe is like that of North America.
5. How the native animals of Europe compare with those of our continent.

Where our ancestors came from. So many people from all parts of Europe have helped settle and build up the United States that we can truly say that Europe is the "Land of Our Ancestors." The first settlers came from England and Spain, but in recent years more people have come to our country from eastern and southern Europe. Nearly every one of us knows some one who formerly lived in Europe, or whose parents came from there.

Size and position. Only one continent is smaller than Europe, and that is Australia. Although Europe is such a small continent, it contains more than thirty nations and has more inhabitants in proportion to its size than any other continent (Fig. 261). If our country were as densely peopled it would have more than three times the number of inhabitants it now has.

Europe is a part of the "Old World," which includes also Asia and Africa. Europe and Asia together form one great land mass, Eurasia, and Europe is called a separate continent only for convenience (Fig. 97). If you turn the globe so that you are looking down on Europe, you will see that this continent is very nearly in the center of the land area of the world. Being so near many other lands, the people of Europe could easily carry on trade from the earliest times. Its location in relation to other countries

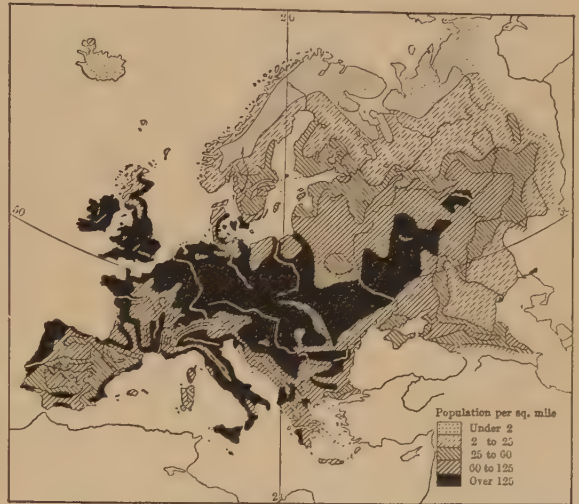


FIG. 261. A population map of Europe. Why are there so few people in northern Europe?

has helped the people of Europe develop trade with neighboring lands.

Why Europe can easily carry on ocean trade. The coast line of Europe is broken by many long bays and inlets which extend far into the land area (Fig. 260). Europe thus has so many peninsulas, or narrow areas of land, extending into the Atlantic Ocean and the *Mediterranean Sea* that no part of the continent is far from the great ocean highways. The cities of the interior can thus deliver goods to the seaports more easily and cheaply than can cities of the interior of a great country like the United States, the center of which is many hundreds of miles from the ocean ports.

Where people live. Europe has a greater highland (Fig. 262) extending from the Atlantic Ocean to the Black Sea. This highland naturally contains few people. It separates southern Europe, with its many mountainous peninsulas where people live in the valleys and other favored places, from the Great Lowland Plain to the north. This plain is the richest and most populous part of the continent, though its eastern portion, which extends into Asia, has few people.

Farther north in the British Isles and the Scandinavian Peninsula is another, or lesser,



Ewing Galloway

FIG. 262. A view of Mt. Ortler. Three countries, Italy, Switzerland, and Austria, meet on this mountain. In what mountain group is it? Why do you think it might be difficult to ascend? Why is it safe for these people to travel on the snow?

highland, not so high as the greater highland to the south (Fig. 262.) Here, as in southern Europe, the people live only in the more favored regions. Many of them live near the ocean and get their living more from the sea than from the land.

The surface features of Europe thus remind us of North America, with its greater highland, its lesser highland, and its great central plain. But in Europe these features extend from west to east and not from north to south, as in our continent. This helps the people of Europe, because most of their trade is carried on in an east and west direction, just as ours is. The highlands, therefore, do not have to be crossed, as ours do, in going from the interior to the coast.

Four of the most important rivers of western Europe, the Rhine (Fig. 263), Danube, Rhone, and Po, have their headwaters in the Alps. The *Rhine* flows north-

ward to the Atlantic, the *Danube* flows eastward to the Black Sea, and the *Rhone* and *Po* flow into the Mediterranean. The largest and longest rivers of Europe are in the eastern part of the continent, and flow into the *Caspian Sea* and *Black Sea*, both inland seas. Hence these rivers are not important trade routes, for it is the valleys that give an outlet to the Atlantic that are the best located for commerce. Nearly all the rivers of Europe flow through low plains and are navigable for long distances. To make water transportation possible from one river to another the important rivers have been connected by canals. Some parts of Europe are covered by a network of canals so that freight can be moved easily in any direction.

How climate has favored Europe. All of Europe except the extreme northern part is in the North Temperate Belt, and here agriculture and manufacturing are the

leading industries as they are in similar parts of North America. In the northern part of the continent are grown crops similar to those of the northern United States and southern Canada. In southern Europe oranges, olives, and grapes are cultivated just as they are in California. The moist west winds bring a good supply of rain from the Atlantic to most of western Europe (Fig. 264).

These winds, however, lose much of their moisture as they blow over the countries nearest the Atlantic, and as one goes farther eastward the climate becomes drier and drier. Much of eastern Europe is as dry as is the United States just east of the Rocky Mountains. Grain growing, however, can be carried on in this section of Europe because the rain comes mostly in the growing season, as it does in the wheat regions of our own country.

How the plants and animals have been used. Once great forests covered a large part of Europe. They extended as far north as the climate permitted trees to grow. In the lowlands much of the forest has been cut so that the land could be used for other purposes, just as has been done in the thickly settled sections of our country. All over northern Europe are found great evergreen forests like those in Canada. In Sweden, Norway, and Finland lumbering is carried on extensively. North of the forests, as in North America, is a broad region where only grasses and mosses can grow, and where, therefore, there are few people.

Some of southern and southeastern Europe is too dry for trees, and in this area great grasslands are found. These are natural grazing regions. In certain sections of Italy, Spain, and Portugal trees are grown for their products. Among these trees are the olive, orange, chestnut, and cork oak. In some sections the country is so dry in the summer that crops can be grown only where irrigation is possible.



Brown Bros.

FIG. 263. A view on the Rhine. This picture was taken in Germany near the place where the Rhine is joined by the Moselle. Why is the Rhine a busy river? Where are the towns built? What river in our country is sometimes called the "Rhine of North America"?

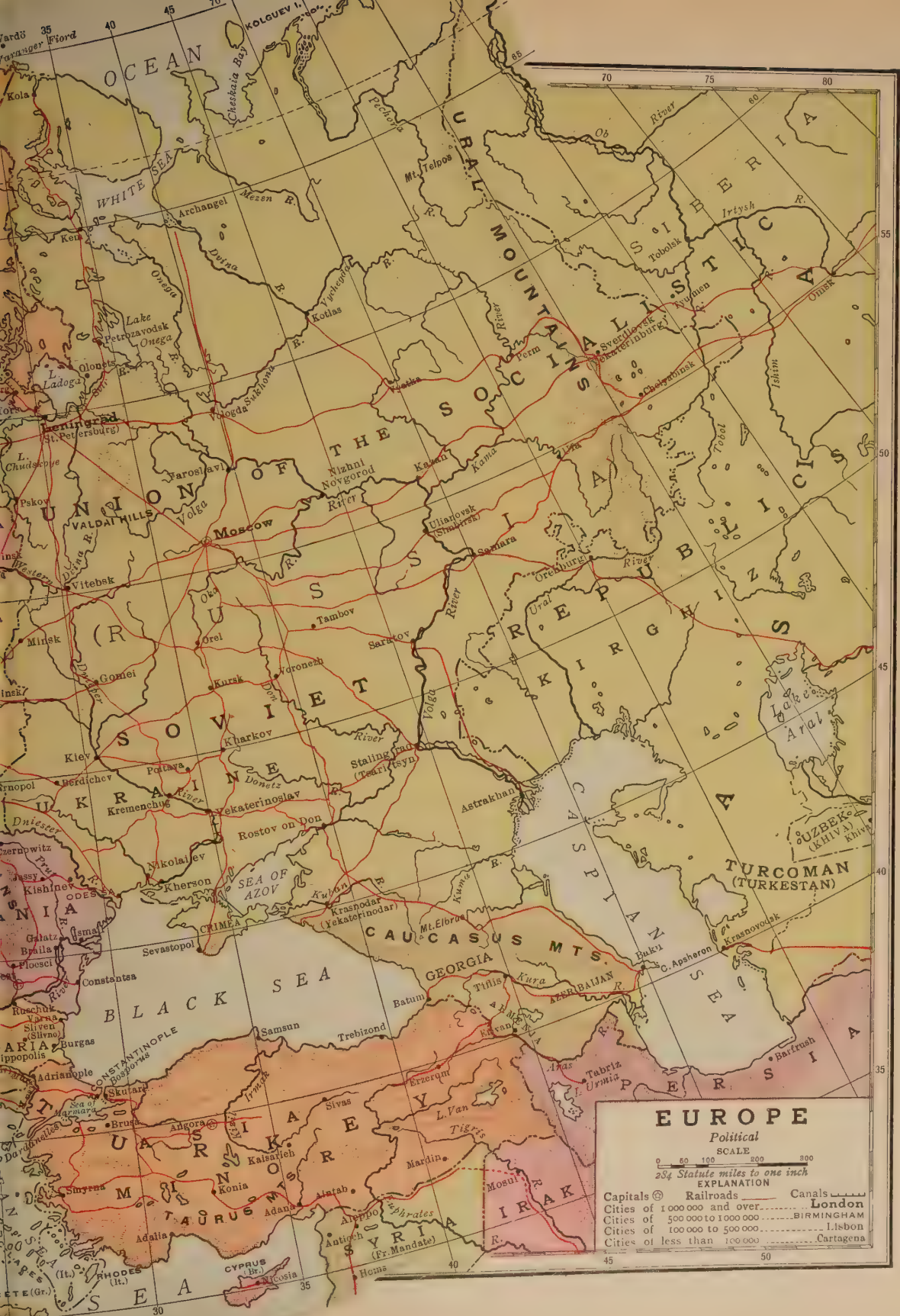


FIG. 264. A rainfall map of Europe. Do you think the small amount of rainfall in northern Europe has anything to do with the fact that few people live there?

The wild and domesticated animals of Europe are similar to those of North America. In fact, many of our domestic animals originally came from Europe. Among the wild animals are the brown bear, fox, wolf, beaver, ermine, and otter. All of these are valuable for their skins. The chamois of the high Alps, whose skins are much prized, and the reindeer of the far north, useful both for work and milk, are the most interesting of the native animals of Europe.



FIG. 265. A.P.



126. WHAT THE POLITICAL MAP OF EUROPE SHOWS

Problems:

1. In what ways are the countries of Europe well situated for trade with each other and with the rest of the world? (a) Of the countries of Europe, only four of the important ones do not touch the sea. Which are these? (b) Where is Europe in the land hemisphere? (Fig. 102.) What advantage has it for trade? (c) What large arms of the ocean penetrate far into Europe? How do these help trade? (d) What countries touch the sea on two or more sides? Of what advantage is this? (e) Write a short answer to the problem.
2. Why are the cities of western Europe better situated for commerce than those in the eastern part of the continent? (a) Make a list of ten cities in each of these two sections of Europe (Fig. 265). (b) Which ones are seaports? (c) Which are on navigable rivers? (d) Which ones have the better advantages for trade with the Americas? with Africa and Asia?
3. The population map of Europe (Fig. 261) shows you where the greatest number of people live. From the political map (Fig. 265) select twenty-five of the largest cities, using the size of type on the map and the Appendix. (a) In which country do you find the greatest number of these cities? (b) Which of these cities are ports? (c) Which are inland cities?

Questions:

1. What is the largest country?
2. Where is Greenwich? For what is it known?
3. Through what countries does the Rhine flow?

Essential names and places:

Study the map, Fig. 265, and then locate the following on an unlettered map of Europe: ten capitals; the cities of Glasgow, Hull, Liverpool, Dublin, Belfast, Bergen, Lyon, Marseille, Havre, Bordeaux, Antwerp, Brest, Amsterdam, Rotterdam, Danzig, Hamburg, Leningrad, Odessa, Milan, Venice, Naples, Barcelona, Gibraltar, Fiume, and Constantinople.

127. WHERE THE MANY PEOPLE OF EUROPE LIVE

SOME THINGS TO LEARN

1. The names of fifteen nations of Europe and with each the name of its people and language.
2. The different occupations of the people.
3. Why Europe must carry on a great deal of trade.

The many different peoples and languages.

Europe is an old continent. It has long been occupied by white people, and many different nations have grown up on it. Each section had developed a different language in the course of a long time. Indeed, it sometimes happens that the people in one part of a country often speak quite a different language from those in another part only a few miles away. In the countries with which the United States carries on the most business, English, French, German, Spanish, Italian, Norwegian, or Swedish is spoken. These countries are also the ones most visited by travelers from our country. Other important languages are Russian, Greek, and Polish.

With so many different nations and languages, it is not easy to carry on trade or to travel in Europe. Each country has its own laws and customs, and a traveler has to show his permit to travel, and usually has to change his money into a new kind every time he goes from one country into another.

How people make a living. Many of the smaller countries of Europe contain so many people that it is impossible to raise all the necessary food. Farming is carried on in every country (Fig. 266), and in thickly populated regions the land is so valuable that usually it is made to produce better crops than in new countries where there are fewer people and where land is cheaper.

As in North America, grains are grown in the regions having short summers. In the warm southern peninsulas crops like those of California and Florida are raised. Other

FIG. 266. A landscape in south-eastern Finland.

This scene is much like scenes in many parts of the United States.

Notice the way the fences are built and the broad, low buildings.

Is this a well-watered area?

Does this part of Finland seem to be thickly settled?



Thompson

Sections grow potatoes, beets for sugar, turnips for food, and other crops much like those found in our country. Europe grows cotton and little corn, and western Europe, where most of the large cities are found, does not produce enough wheat for the needed flour.

Grazing is followed on the steeper mountain slopes, and in the rougher or drier sections. England, France, Scotland, and Belgium are especially famous for their cattle, sheep, and horses. In fact, most of the different kinds of cattle, sheep, horses, and swine found on farms in our country are named for the section of western Europe from which they originally came.

Fishing is the occupation of great numbers of people in France, Great Britain and Ireland, and Norway because of their nearness to the fishing grounds of the Atlantic (Fig. 267). The northern forests and the barren areas bordering the Arctic Ocean abound in fur-bearing animals. These vast regions have long been one of the chief sources of the world's fur supply.

England, Belgium, France, and Germany are rich in coal and iron, and in these nations manufacturing on a large scale has been developed in the last fifty years or more. Switzerland, Norway, and Italy have an abundance of water power furnished by

mountain streams, and here, too, manufacturing is being developed rapidly.

The task of supplying food and other necessities for such a large population requires a great deal of trade between the different countries. Western Europe has therefore had to build many railroads. These, with the navigable rivers and connecting canals, form a network of trade and travel routes. As a result, transportation is carried on easily in almost every direction. The ocean can be reached readily from the interior countries; good harbors are many and well located for carrying on trade with other continents on which Europe must depend for much of its food and raw materials for manufacturing.



Thompson

FIG. 267. On the Mediterranean coast of France. The people here are fishing for sardines. How are the fish being caught? Is this a good landing place in time of a storm? Why?



FIG. 268. A Map of Northwest Europe

HIGHLAND COUNTRIES OF
NORTHWEST EUROPE

128. WHAT THE MAPS SHOW

blems:

1. What bodies of water would you pass through on a trip around Great Britain, sailing west from Dover? What island groups would you pass? What large single islands?
2. Trace two trips from Liverpool to Paris, using canals as much as possible. On what rivers did you go?
3. Locate three towns in each of the highland regions shown on this map.
4. By using the scale find the distance between these points: Wick and Banff; London and Bath; Portsmouth and Havre; Calais and Brussels; Paris and Berne; Amsterdam and Hamburg; Oslo and London.
5. Name the cities you would pass on a trip up the Rhine from Rotterdam to Basle. Through what countries would you pass?
6. Trace three ways of reaching the coast from Strasbourg, in eastern France, naming the large rivers you would use. What large bodies of water would you reach?

estions:

1. Name the countries shown on this map and the capital of each.
2. What country shown here has no coast line? What countries border it on the north, west, and south?
3. Name and locate the mountain ranges that form boundaries between countries.
4. From the type given in the legend, select the cities of 500,000 to 1,000,000 in population.
5. Name the bodies of water that touch France on the west and north. Turn to the map of Europe (Fig. 265) and find out what sea touches France on the south.

sential names and places:

Study this map and then locate the following on the relief map: North Sea, Irish Sea, English Channel, Strait of Dover, Skagerrak, Bay of Biscay, Zuider Zee, Alps, Cheviot Hills, Black Forest, Grampians, River Thames, Lands End, Channel Islands, Shetland Islands, London, Paris, Oslo, Rotterdam, Hamburg.

129. THE BRITISH ISLES: THE ISLAND
COUNTRIES OF EUROPE

SOME THINGS TO LEARN

1. The countries included in the British Isles.
2. How English laws and language came to America.
3. Facts about the surface and the climate of the British Isles.
4. Why agriculture in England is not so important as manufacturing.
5. Why the people of the British Isles have developed fishing.
6. Why mining and manufacturing have become the leading occupations.
7. Reasons for the growth of Glasgow; Manchester; Liverpool; Birmingham.
8. Why England is a great commercial nation.
9. How the surface and climate of Ireland have favored the growth of crops.
10. Some regions of special interest in Great Britain and Ireland.
11. Why England is such an important part of the British Isles.
12. Four reasons why London has become a great city.
13. Some interesting facts about Ireland.

What is included. The name *British Isles* has long been given the region including the large islands of *Great Britain* and *Ireland* and about five thousand smaller islands which lie near their shores.

Great Britain is the largest of the British Isles, and is divided into three countries, *England*, *Scotland*, and *Wales* (Fig. 268). England is the richest and most populous country. We frequently speak of England as if it were the name of the nation and not merely the name of a country. This is partly because it contains *London*, the capital of the British Empire and *the largest city in the world* (Figs. 271, 274).

London is the seat of the central government whose possessions all over the world form the British Empire. The largest divisions of the British Empire outside the British Isles are *India*, *Canada*, *Australia*,

and the *Union of South Africa*. A part of Ireland now has a government of its own and makes its own laws as do Canada, Australia, and the Union of South Africa. It is known as the *Irish Free State*. *North-eastern Ireland* is separate from the Irish Free State.

The United States once English colonies.

The thirteen colonies, which at the close of the Revolutionary War (1783) formed the United States of America, were English colonies before that war. The early colonists lived under English law, and naturally the new country patterned its laws after English law. English is our national language, and many of our customs are like those of other English-speaking people in other parts of the world. But our government is not like the British government, and many of our ways of doing things are quite different from those of England. The early settlers found many conditions that were new and strange, and therefore they had to adopt new ways of living.

Where the people live. Eastern and southern England lie in the great lowland plain of Europe (Figs. 260, 269). Here the land is level or gently rolling, except for occasional ranges of hills. This portion of the country has the most people because of its many manufacturing and trade cities.

The western, central, and northern parts of Great Britain are rougher and in places mountainous, although none of the mountains is as high as Mount Washington in New Hampshire. There are cities in the larger valleys of this region, but much of it is thinly settled. The rougher and higher regions are famous for their scenery and especially for their many beautiful lakes. Some of the lakes are widely known because they have been described in famous poems and stories (Fig. 270).

The British Isles have many bays, some of which make fine harbors. The harbors

of England and southern Scotland are the most important, because this is the industrial section which has the greatest need for trade with other countries. The harbors of the north are mostly fishing centers.

None of the rivers of the British Isles is as long as the Delaware or the Hudson, but all are navigable for some distance. There are, therefore, the centers of the greatest ocean trade. London on the *Thames*, Liverpool on the *Mersey*, and Glasgow on the *Clyde* are the most important ports.

The reasons for agriculture. The area of the British Isles is a little less than that of New Mexico, but the population is almost half that of continental United States. Though agriculture is carried on wherever possible, and especially in the southern portion, enough food cannot be produced to supply the large cities. Great quantities of wheat, fresh meat, and other food must be secured in trade from other parts of the world.

The land devoted to raising crops is less than the farming land of Georgia. A large area is pasture land. This means, of course, that stock raising is important. In the highlands of Scotland are found large numbers of sheep and cattle. Western England produces many cattle. The plains and rolling land are used chiefly for the raising of sheep and for farming (Fig. 269). The chief crops are grains, including oats, barley, and wheat, turnips, potatoes, and small fruits. Perishable foods like milk and fresh vegetables are also produced extensively. Owing to the cloudy and cool growing season, many crops familiar in our country cannot be grown in the British Isles. This is particularly true of corn, or maize.

The fishing centers. On account of the great demand for fish as food, fishing has been developed into a leading occupation. Much of the fishing is carried on just to the east of Great Britain in the *North Sea*, where the water is shallow and abounds

llent food fish. Fishermen from the
ish Isles also go to the fishing grounds
he Atlantic near Newfoundland. They
off Iceland and along the coast as far
h as the northwest coast of Africa. Two
he greatest fishing centers in the world
Hull and *Grimsby* on the east coast of
land (Fig. 268). The most important
market in the world is the Billingsgate
ket in London. Great Britain ranks
t to the United States in its fishing.

**the importance of manufacturing and
ing.** England is the greatest manufac-
ing country in the world, largely because
s wealth of coal and iron. England had
g been famous for its textiles, but the
ention of the steam engine and of spin-
g machinery made it possible to develop
ining until now it far outranks any other
n of manufacturing.

ll of the cotton and most of the wool
manufacturing are imported into the
ish Isles from other countries. Much of
flax used is grown in Ireland, but the
st, perhaps, comes from Belgium.

ll of the iron ore mined in the British
s is smelted and manufactured at home.
el ships, machinery, and hardware are a
of the products that are made from iron
he larger cities. Although Great Britain
s great quantities of coal for her manu-
uring and as fuel for her steamships and
ns, she still exports much coal. The
nds are fortunate in having such great
l deposits, because they have no oil, and
as a fuel is increasing in importance
ry year.

he greatest center of steel shipbuilding
he world is *Glasgow* (Fig. 271) on the
er Clyde, near both coal and iron-ore
istricts. Glasgow is the second city in size
he British Isles, being about as large as
roit.

Manchester, England, is the leading manu-
cturing city, and is noted for both its cotton

spinning and its cotton-spinning machinery.
It is near rich coal fields and is connected
with the great city of Liverpool by a
ship canal. Manchester is now the third
port of England. *Leeds* is another textile
city of England known especially for wool
manufacturing.

Birmingham, because of its location near
coal and iron, manufactures hardware and
much metal work. It is for this town that
Birmingham, Alabama, is named. *Sheffield*
has a world-wide reputation for its cutlery.

Edinburgh, an old and famous city, is
the second city in size in Scotland.



Thompson

FIG. 269. A farm near the southern coast of England. This is a beautiful rolling country from which the forests have long since been removed. What crops and animals are raised in this part of the country? Notice that there is no waste land. Why are the hay and straw stacked out of doors and not stored in barns?



Photograph by Elmendorf, from E. Galloway

FIG. 270. A scene in the Lake District of England. This area is in west-central England and is much like the Adirondacks in New York. Where are the houses placed? Why? What sports could one engage in here?



Thompson

FIG. 271. A view of Glasgow University, Scotland. Glasgow is almost as far north as Sitka in Alaska and yet it contains more than a million inhabitants.

Why a great commercial nation. Great Britain is an island nation with a large population, engaged chiefly in manufacturing and mining. It is dependent on other countries, not only for much of the food its people need, but for cotton and other raw materials needed for its factories. It sells its coal and factory goods in exchange for these necessities. This is why Great Britain has so much commerce centered in several large ports. Because of its position, so close to other countries of western Europe, it long ago established a great commerce with its neighbors. As an island nation on the eastern side of the Atlantic, it is also in a splendid position to carry on commerce with the Americas and with British colonies in the Eastern Hemisphere by way of the Mediterranean. The leading port and chief business city of Great Britain and of the British Empire is London on the Thames River (Figs. 268, 272).

Why London is a great city. London is on the east side of the island near to the mainland of Europe. It was settled hundreds of years ago, and is the oldest city in England.

In the early days, trade with the countries of Europe was carried on overland. Lying across a narrow strait from Europe, London was well located for trade. When the ocean became the great highway, its location was equally favorable, and today, besides its commerce with Europe, it also carries on a large trade with Australia and India.

Other cities of the British Isles. *Liverpool* on the Mersey, is the chief seaport on the west coast, and the center of trade with America and West Africa. Its excellent harbor has been so improved that it can now accommodate many large vessels at one time. It is the nearest port to the manufacturing cities of central England, and has excellent rail connections in all directions. Manufactured goods, including textiles and machinery, are therefore sent out through this port, and great quantities of wheat, meat, and cotton come in.

A ship canal connects Manchester with the sea and with Liverpool, so some of its imports and exports are unloaded or loaded at the Manchester end of the canal. Nottingham, this city, once dependent on Liverpool as a harbor, is the third port in England.

Cardiff, Wales, exports more coal than any other city in the world. *Bristol*, at the mouth of the Severn, is of interest because it was from here the Cabots sailed on their first exploring trip along the eastern coast of America.

Southampton is the leading port in southern England. Nearly all vessels that pass between ports on the North Sea and America make regular calls here.

Ireland: the "Emerald Isle." Ireland lies like a saucer, low in the center and high around the edge (Fig. 268). Because of its mild, moist climate the grass is green almost the year round. For this reason Ireland is often spoken of as the "Emerald Isle." There are many swamps or bogs in Ireland. These were once lakes that through man-

rs have been slowly filled by decaying
nts which grow in wet places. In many
ions the people cut out big chunks of
material and dry it for fuel. It is known
peat. Ireland also has many lakes, of
ch the *Lakes of Killarney* are the best
own (Fig. 273).

Ireland is mostly a farming country with
large cities. The chief farm products
wheat, flax, cattle, butter, and bacon.
ese, excepting wheat, are also the chief
orts. The flax is spun into thread and
n made into lace or woven into linen.
en factories are located in the larger
es, and Irish linen is famous for its
eness and quality. Most of the lace
king is done by the people in their homes.
Dublin, the capital of the Irish Free State,
d Ireland's largest city, is well known for
brewing. Second in size is *Belfast*, in
rthern Ireland, a center for the spinning of
en and for shipbuilding. *Cobh* (Queens-
n) is the port for the city of *Cork*.

Features of special interest. England and
otland were old, old countries when
merica was discovered. In those days,
gs, princes, and noblemen built great,
ong castles in which to live. Many of
ese old castles may yet be seen in the
tish Isles. One of the most noteworthy is
Windsor Castle (Fig. 274), about twenty
es southwest of London on the bank of the
ames. For more than 800 years this
tle has been the favorite residence of the
GLISH royal family. Most of these old
tles are now in ruins.

The ancient cathedrals of England are as
eresting as the castles. The most noted
es are *Canterbury Cathedral* and *West-
minster Abbey*. The latter is in London,
d in it are buried kings, queens, and many
er noted people of England. Here also
s buried an unknown soldier of the World
ar, with all the honors that could be
id the most noted of men.



FIG. 272. A view of the River Thames in London. The Thames flows through the center of the great city of London. What are some of the advantages that come to the city from this river? Why are the buildings placed so close together? Why has a park been left along the bank of the river?



Ewing Galloway

FIG. 273. The Lakes of Killarney. Ireland has many beautiful lakes. What, besides the lakes, adds to the beauty of the scenery here? What section of our country has similar irregular lakes in deep valleys between the hills or mountains?

London is visited more than any other of the cities of the British Isles. Here are located the *Houses of Parliament*, in which the representatives of the people make the laws as our lawmakers do in the capitol at Washington. These, together with other government buildings, are especially interesting to visitors (Fig. 275).

Many sections of the British Isles are noted for their scenic beauty. Those most visited are the highlands of Scotland, the Cumbrian Mountains in northwest England, better

known as the English *Lake District*, and the mountains and valleys of Wales. The English Lake District (Fig. 272) is much like the Adirondack region in New York.

These areas, with their rugged slopes, rushing streams, and beautiful scenery, are all delightful places to visit. With the seashores they serve as places of recreation for the people in the crowded cities.



Thompson

FIG. 274. A view of Windsor Castle. This picture was taken from the River Thames.



FIG. 275. Buckingham Palace. This is the London home of the ruler of the British Empire, the highest officer of the nation. What flag is flying on the palace?

130. NORWAY AND SWEDEN: HOME OF THE ANCIENT NORSEMEN

SOME THINGS TO LEARN

1. Why the ancient Scandinavians were sailors.
2. Reasons for differences of occupations in Norway and Sweden.
3. How Norway and Sweden use their forest products.

4. Why Norway and Sweden are interesting countries to visit.
5. Why fish and lumber are exported from these countries, and wheat and flour imported.

The region and its coast line. The large peninsula occupied by Norway and Sweden is called the *Scandinavian Peninsula*. Nearly all of Norway is rugged and mountainous. The mountainous coast has many long, deep bays, or *fjords* (Fig. 276). Into some of these vessels can sail for more than a hundred miles. These bays are often bordered by steep mountain walls clothed in evergreen trees. The fjords are therefore famous for their scenery. Many of them are also fish harbors. Wherever along the sides of fjords there is a little land with gentle slopes, even though the soil may be poor, there will be farms, or in some cases a village.

The ancestors of the people of this region were bold sea robbers known as the Vikings or Norsemen. It was the Norsemen who first discovered Iceland, Greenland, and the eastern coast of North America. It follows that the people of Norway have long been seamen and have made their living largely from the sea. Fish and fish products make up about a third of Norway's exports.

Western Sweden is mountainous, but the eastern part is mostly a low plain devoted to agriculture. As the winds generally come from the west, the mountains of Norway receive a great deal of rain while Sweden is much drier. Norway has a winter climate quite like that of British Columbia and Alaska, but Sweden, cut off from the north by winter winds from the ocean, has a dry, cold winter more like that of our northern Great Plains. As a result the *Baltic Sea* is frozen and the Swedish ports are closed for several months each year.

The place of agriculture and mining. There is so little farming land in Norway that only about one-fourth of the people are engaged in agriculture. Most of the far-

are very small. The principal crops are grains that can be used for food. Norway does not, however, raise enough food for its own needs, and therefore has to import from other countries.

About one-half of the people of Sweden are engaged in farming, because of the favorable summer climate and because eastern and southern Sweden is a lowland that is well suited for cultivation. The chief crops are those that grow well in cool climates, such as oats, barley, potatoes, turnips, and hay. Butter and cheese are produced on the dairy farms and are exported.

There are valuable iron mines in northern Sweden, and much iron ore is exported. The remainder is used at home. Swedish steel is used largely in the making of tools. Wood is plentiful, and charcoal is used for smelting the iron ore for the fine steel. Manufacturing, except for steel and machinery, is not very important, but is increasing as the people are learning how to make more use of the abundant water power.

The value of the forests. Like the coast of southern Alaska, *Scandinavia* has great forests. Hence lumbering is a leading industry in the north, and lumber products make up about one-half of the Swedish exports. The forests are carefully managed. As the old trees are cut new trees are planted so that the forests may always be of value. It was from these forests that the ancient Norsemen got the lumber to make the strong little vessels in which they braved the stormy North Atlantic.

Sweden makes and exports thousands of millions of matches each year. It was a Swede who invented friction matches. Norway exports much lumber, wood pulp, and paper.

Some features of special interest. The Norwegian fiords, with their beautiful wooded slopes and waterfalls and their interesting villages, attract large numbers of visitors each year (Fig. 276).



Ewing Galloway

FIG. 276. Merok Fiord, Norway. The Norwegian coast is much like that of parts of Alaska. How can you tell that this is an arm of the sea and not a small lake? Is the water deep or shallow? In what season was this picture taken?

Northern Norway is so far north that, in the middle of the summer, it has sunlight twenty-four hours each day for several weeks. This region is the only part of the world that can be easily reached by those who wish to see the "Midnight Sun." *Hammerfest*, the most northern town of Europe, is the town most often visited. On the other hand, this region might be called the "Land of the Middy Moon," for there are many weeks during the winter in which the sun is not seen at all and lamps must be used during the day as well as the night.

Throughout the winter the mountains of Norway and Sweden afford fine opportunities for both coasting and skiing (Fig. 277). In fact, skiing has been a national sport in these countries since the time of the Norsemen.

The people and their cities. The people of Norway, Sweden, and Denmark are known as Scandinavians. They are a large, strong, generally fair-haired people, and are Norwegians, Swedes, or Danes according to the language they speak. Many Scandinavians have come to our country and have settled largely in the northern states of the Mississippi Valley. These people, most of whom are farmers, are thrifty and industrious.



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FIG. 277. Skiing in Sweden.

This picture was taken at a seaside resort near Stockholm.

The winter season brings much snow, and everyone enjoys the winter sports.

Did you ever see a pair of skis?

Of what are skis made? How long are they?

Of what use is the staff in each hand of the skiers?

Stockholm on the east and *Göteborg* on the west coast are the leading commercial cities of Sweden. *Stockholm* is the capital, and imports much wheat and flour. Most of the surplus products of Sweden are sent out through *Göteborg*. The leading exports are lumber, wood pulp, and fish.

Oslo (Christiania) is the capital and largest city of Norway. Here lumber and fish are exchanged for grain, textiles, iron, and steel goods. The leading fishing center is *Bergen* on the North Sea.

SOME RELATED PROBLEMS

1. Why do more people live in southern than in northern England?
2. What part of the British Isles would you like to visit? Why?
3. How does the population of Europe compare with that of the United States?
4. What breeds of cattle and sheep are named from sections of Great Britain?
5. Why is Great Britain important in ship-building?
6. Compare the number of countries in Europe with the number in North America.
7. Why do so many of the people of England live in the cities?
8. Why cannot our boys play football the whole year round as they do in England?

9. Why does the west coast of Great Britain get more rainfall than the east coast?
10. Why does Norway get more rain than Sweden?

SOME THINGS TO DO

1. Make a list of ten different languages, and opposite each place the name of the country where it is used. Which of these do not belong in Europe? How many of them have you heard spoken?
2. Look on the bottom of your dishes at home to see if any were made in England.
3. Study the globe, or the world map (Fig. 97) to find the shortest route from your home to Southampton, England.
4. Find the shortest distance in a straight line from London to each of these cities: Paris, Berlin, Moscow, Constantinople, Gibraltar.

THE GREAT LOWLAND PLAIN AND CENTRAL UPLAND

131. WHY THIS IS A REGION OF GREAT INDUSTRIES

SOME THINGS TO LEARN

1. The location and extent of the Great Lowland Plain and Central Upland.
2. Why the Great Lowland Plain and Central Upland are favorable for both agriculture and manufacturing.

How the industries are distributed. The *Great Lowland Plain* of Europe extends from southern England and western France across the continent and into Asia. This plain is narrow at the west, but spreads out like a fan toward the east, until in eastern Europe it reaches from the Arctic Ocean on the north to the Black Sea on the south. This plain is the great food-producing area

Europe, for the soils everywhere are generally good and in certain places very rich. The *Central Upland* lies between the Great Lowland Plain and the *Alps*, and extends from southern France northeastward, almost halfway across the continent. This upland contains many mountain ridges that are forested or are rich in minerals. This is the manufacturing and industrial section of the continent. The land, where possible, is devoted to agriculture or grazing (Fig. 278).

The climate in the western part of these regions is mild, and there is little difference between the rainfall of one season and another. As one goes farther inland from the Atlantic, the winters grow colder and drier, but the summers are warm, much like those of our prairies and plains. Most of the rain comes at the time of year when it is needed for the growing crops.

132. FRANCE: A LAND OF CONTRASTS

SOME THINGS TO LEARN

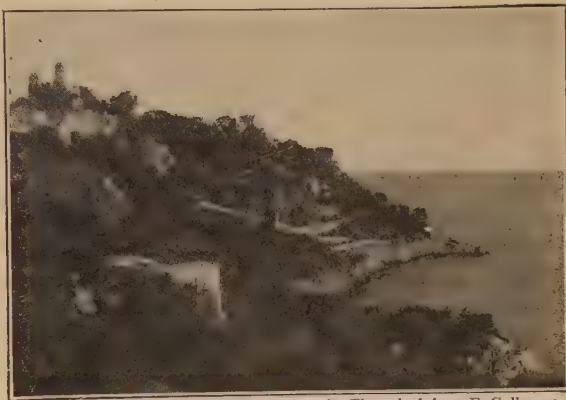
1. Why so many people of France are farmers.
2. The kinds of manufacturing done in France, and why these are carried on.
3. Why Paris is a great industrial and commercial city.
4. The names and locations of five other French cities, and interesting facts about each.
5. Some features in France of special interest to visitors.
6. Some contrasts in surface, climate, and crops.

Surface and climate. France is a little more than four times as large as New York State and has a population nearly four times as great. The greatest number of people live



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FIG. 278. Harvest time near Metz. Metz, France, is in the beautiful valley of the Moselle River. The castle on the hill was built many years ago for protection against enemies. What are the people harvesting? Why are they doing the work by hand and not by machine?



Photograph by Elmendorf, from E. Galloway

FIG. 279. The French Riviera near Nice. The Riviera is a warm coastland like that of southern California, with beautiful protecting mountains lying just back of it. How does one get from the water's edge to the top of the hill? Why are there so many trees?

in the lowlands, for here are the richer agricultural areas, the manufacturing centers, and the cities. Most of northern France lies in the lowlands and in the *Rhone Valley*. The *Rhone Valley*, between the Alps and the plateau of central France, is a gateway from northern France to the Mediterranean. Central France is thinly populated except in the lower portion that borders the Atlantic.

The climate of France is as varied as the surface. Much of the country has a moist winter climate, as any soldier who was in France during the World War can tell you.

The southern coast has a climate like that of California (Fig. 279), and has similar trees and crops. The higher regions have a

cooler climate, and because of this and the less fertile soil they are used for grazing.

France is also fortunate because it touches both the Atlantic and the Mediterranean. The Atlantic ports afford a chance for trade with the countries of the Western Hemisphere and with the British Isles. Across the Mediterranean is Africa, in which France has a number of colonies. The Mediterranean Sea makes trade possible with these regions and with east Africa, in which France also has possessions.

Variety of agricultural products. Farming in France is not carried on as it is in this country. The farms are small, and each farmer tills his small area carefully, so as to get as big a crop as possible. On more than one-fourth of the area of France grains are raised (Fig. 278). Wheat, oats, barley, and rye are all produced, but wheat leads in importance. The French use wheat chiefly for bread, but the population is so large that not enough can be raised for their own needs. So they have to import wheat, just as do England and several other countries of Europe.

In northern France the most important crop is sugar beets, used largely for making sugar. Large quantities of potatoes are also raised in this section and are an important article of food. Part of both the beet and the potato crop is made into alcohol, which is used for power, as we use gasoline.

Farther south, especially in the valleys of the Rhone, the upper *Seine*, and *Garonne*, grapes are the chief crop. So many are the vineyards, and so great is the crop, that France excels all other nations in grape raising. The grapes, for the most part, are made into wine.

In warm southern France the olive, the orange, and the mulberry thrive. The leaves of the mulberry furnish food for silkworms, and the silkworms in turn furnish silk, one of the most famous products of the country.

Silk is the fine fiber forming the cocoon which the full-grown worm wraps itself.

The raising of animals for food and for work has always been an important industry in many parts of the country. Some of the world's finest breeds of horses have been developed in northern France. Naturally the number of animals of all kinds decreased greatly during the World War, and it will no doubt be a long time before the country has as many as before the War. Butter and cheese are exported from the northern sections of the country.

The importance of mining and manufacturing. France mines some coal but is obliged to import a large amount. It has valuable iron-ore deposits, and since the World War the manufacture of tools and machinery has greatly increased. As a result of the World War, France came into control of extensive potash mines once belonging to Germany. Potash is a valuable fertilizer.

France has long been a manufacturing country, especially for silks, fine cottons, and linens. Some of the raw materials for these must be brought in from other countries. The raw materials produced at home and used largely in manufacturing are silk and sugar beets. Since the World War the use of water power for furnishing electricity for manufacturing has greatly increased.

Why Paris is a great city. *Paris*, the capital of France, is the fourth city in the world in size. It is located on the northern plain of France at the junction of the *Seine* and the *Marne*. Like New York, this city has its beginning on an island. This island on the *Seine* is still known as *La Cité* (Fig. 280). Because it can be easily reached from all parts of the continent, Paris has become the greatest railroad center in Europe. The *Seine* and its branches connect with other rivers by means of canals, making Paris a center for water as well as for land commerce.



Ewing Galloway

Fig. 280. A view of a section of Paris. This picture was taken from the roof of the Louvre, a celebrated museum and art gallery. It shows the many bridges across the Seine that are needed to connect the part of the city on the island La Cité with the rest of the city. Does the location of Paris have much to do with making it a beautiful city?

Paris is also a noted manufacturing city, and as a commercial center it is the fourth in the world. It is famous for its art galleries, which attract students from all parts of the world, but is best known to many people because it is the city that sets the world's fashions for women's clothing. Paris is one of the most interesting cities to visit, not only because of its beauty, but because of its many famous buildings and places of historic interest. At the close of the World War the Peace Treaty was arranged in the Palace of Versailles, just outside the city.

Other cities of France. *Lyon*, because it is located where two important river valleys meet, has become a trade center and the third city in size in France. It is especially noted for silk manufacturing. *Rouen* and *Lille*, in the north, are cotton-manufacturing cities.

Calais, on the extreme northern coast, is the nearest port to England. For this reason it is a leading railway and steamship terminus for both passengers and freight.

Havre, situated at the mouth of the Seine, is the principal French port carrying on

trade with the United States, and receives great quantities of cotton and wheat in return for manufactured goods.

Marseille, near the mouth of the Rhone River, is the second city in size and the chief commercial city of southern France. It is especially important for its trade with Africa, China, India, and the East. Much of this trade passes through the Suez Canal and the Indian Ocean.

Bordeaux, at the mouth of the Garonne, is the chief city on the southwest coast. It is the leading city for trade with South America.

Perhaps the most interesting port is that of *Brest*, which was hardly known before the World War. Most of our American soldiers engaged in the World War entered and left France at this harbor.

On the eastern border of France close to the coal and iron districts is *Strasbourg*. Its location on the Rhine gives it a fine advantage for trade.

Features of special interest. Many parts of France are very beautiful and attract

visitors because of their scenery. The region just south of the English Channel and east of Brest is especially interesting because of the scenery, and because the people have many customs not found elsewhere. Here, as in many other parts of Europe, the dress of the people, especially on holidays, is very attractive. In central France is a plateau area famous for its hills, which were once active volcanoes. Near by is another area equally interesting because of its many deep canyons, ravines, and large natural caves.

The coast of the Mediterranean lying east of Marseille is known as the *Riviera*, one of the celebrated health and winter resorts of the continent (Fig. 279). The warm winter climate here is similar to that of California. *Nice*, *Cannes*, and *Monte Carlo* are the towns of the French Riviera most visited.

Southeastern France includes a portion of the Alps. This section is therefore famous for its mountain scenery. Here is the highest mountain in Europe, *Mont Blanc*. It is about a thousand feet higher than Pikes Peak, and is one of the most difficult peaks in all Europe to climb.

France contains many châteaux, or castles, and many cathedrals. The cathedrals of France are as interesting and as ancient as those of England. One of the best known is *Notre Dame* in Paris.

For a long time to come every American visitor to France will want to see some of the great battle fields of the World War. The Château-Thierry and Meuse-Argonne sections are of especial interest to Americans because of the part American soldiers took in the battles fought there.

133. BELGIUM, THE NETHERLANDS, AND DENMARK: THE LOW COUNTRIES

SOME THINGS TO LEARN

1. Why Belgium, the Netherlands, and Denmark are called "Low Countries."
2. How Belgium supports a large population.

3. How the people of the Netherlands have kept the sea from flooding the country.
4. What the farms of the Netherlands produce.
5. Why Denmark is famous for its agriculture.
6. The features of special interest to visitors to the "Low Countries."

Why called Low Countries. Belgium, the Netherlands, and Denmark are called the *Low Countries* because most of the land lies near sea level. In fact, the richest areas of both the Netherlands and Belgium lie below sea level, and great walls, known as *dikes*, keep the water of the ocean from flooding the land.

The summer climate of the Low Countries is warm and moist. The soil and the climate are both favorable for growing grass and grains. All of these countries, therefore, are famed for agriculture and especially for dairying. Grain and sugar beets are the most valuable crops.

Belgium: the most densely populated country. *Belgium* is only about one-third as large as Maine but has almost as many people as all New England. There are more than 600 people for every square mile in this country. Yet in this small area all the people are able to make a living.

About one-half of the people are farmers. The farms of Belgium are very small, but are so carefully cultivated that the yields of cereals, potatoes, and sugar beets are very large. Yet Belgium does not raise enough products for home use and must therefore buy from other countries both food for its people and raw materials for its factories.

Southeastern Belgium lies in the Central Upland area of Europe, and here are rich coal and iron mines. These valuable minerals help to make Belgium a great manufacturing country. Cottons, woolens, linens, glass, and steel goods are the best-known products. Lace making is one of the home industries for which Belgium has long been famous the world over.

the Netherlands, or Holland: a land of es and windmills. While the *Netherlands* is a little larger than Belgium, it does not have quite so many people. All of the country lies within the Great Lowland Plain, and much of it is so low that the sea has to be kept back from the land by dikes. A new section, an area a third as large as Delaware, now being drained, will soon be added to the usable land of the country. In such a flat country the winds are not stopped by either hills or mountains, and a breeze once started is likely to continue for a long time. Hence the wind can be depended on for power, and windmills are to be seen everywhere (Fig. 281). They are used for grinding grain, for running various kinds of machinery, and also for pumping water from the diked lands into the sea.

Farms cover about nine-tenths of the country. These farms are largely used for dairying and for the raising of sugar beets. The Netherlands is famous for its dairy products, especially for its cheese.

Thousands of acres are used for growing flower bulbs, many of which are shipped to the United States. Many of the tulip, hyacinth, crocissus, and daffodil bulbs which have been planted in our gardens came from *Holland*.

Denmark: a land of farmers. Extending northward between the North and Baltic Seas is a small peninsula, the northern part of which is *Denmark*. The surface and soil of Denmark are much like those of the Netherlands, although the land is not so low. One of it is below sea level. The climate of this peninsula is a little cooler than that of the Netherlands, because it is farther north and is almost surrounded by water.

Denmark is one of the most successful farming countries in the world, partly because the government has helped the farmers grow crops and market them.

The chief crops are oats, barley, rye, hay, sugar beets, and potatoes. But Denmark



Photograph by Elmendorf, from E. Galloway

FIG. 281. Windmills in the Netherlands. The Netherlands is known as a land of dikes and windmills. The top of the mill can be turned to face the wind. Notice the wheel that runs on a circular track. What is it for? For what purposes could these mills be used?



Ewing Galloway

FIG. 282. A workroom in Royal Copenhagen Porcelain Works, Denmark. The man is dipping hand-painted pottery in glazing material just before it is baked to make it hard. For what is such pottery used?

is best known for its dairying. Butter is sent in large quantities to England and other European countries. Denmark also has a large number of flourishing factories (Fig. 282), and many of the people are engaged in fishing.

The people and cities of the Low Countries. The people of all the Low Countries are

known for their successful manufacturing and farming. They have also had a large part in building up other regions of the world. Belgium controls the *Belgian Congo*, a rich area in central Africa, and the Netherlands has many rich island colonies in the *East Indies*.

The people from these countries have also helped to develop our country, for many Dutch from Holland and many Danes from Denmark have come to make their home in



Ewing Galloway

FIG. 283. A street in Amsterdam. Travel on many of the streets of Amsterdam is by boat. Why are many bridges necessary in this city? How could people travel in winter?



Keystone View Co., Inc.

FIG. 284. The harbor of Copenhagen. Copenhagen is the leading commercial city of Denmark. How do the landing places differ from those in New York City?

the United States. In the states of New York and Pennsylvania are many towns which have Dutch names because they were first settled by the Dutch. At present the Dutch and Danes in America are nearly all dairymen and farmers.

Brussels, the capital of Belgium, is the largest city, but *Antwerp*, the chief seaport, is one of the leading ports of Europe.

An interesting city of the Netherlands is *The Hague*, widely known for its *Peace Palace*. *Amsterdam* (Fig. 283) the largest city, is the center of the world's diamond-cutting industry. *Rotterdam* is the chief seaport.

The trade carried on by the Netherlands is out of all proportion to the size of the country. This is partly because Rotterdam is the natural port of central Europe, and partly because the Dutch colonies in the East Indies send to the home country great quantities of products, which are re-shipped to all parts of the world.

Copenhagen (Fig. 284), situated on an island, is the capital of Denmark. It is the center of the business life of the country.

Features of special interest. One of the picturesque things about the Netherlands is the dress of many of the people. There is much wet weather, and wooden shoes are worn a great deal.

Boating on the canals in summer and skating in winter are greatly enjoyed by many of the people of the Netherlands. Skating is not only a favorite winter sport but also a means of travel.

Some Belgian farms are so small that the owners have no farm animals. In the cities one often sees a boy or woman from one of these small farms delivering milk in a cart drawn by a large dog.

The flat lands of Belgium and the Netherlands also interest the visitor. Long dikes wind in and out along the edge of the sea, and scores of windmills dot the landscape as far as the eye can see (Fig. 281).

134. NEW COUNTRIES OF CENTRAL EUROPE

SOME THINGS TO LEARN

1. When and why Poland and Czechoslovakia were made independent countries.
2. How the people make a living.
3. How these countries get their products to the ocean highway.

Poland: a new-old country. Once *Poland* as an important country of Europe, but three strong neighboring countries, Germany, Russia, and Austria, joined forces and divided the country among themselves. When the World War was over, the three parts of Poland were once more united, and the Polish Republic was formed.

Why agriculture is important in Poland. Poland lies in the Great Lowland Plain of Europe, where both soil and climate favor agriculture and dairying. Because of this more than half the people are farmers. Chief among the crops are grains, sugar beets, and hay. About one-fourth of the land is covered with forests, from which each year great quantities of lumber are cut for home use and for export.

Poland's chief outlet for her products is by rail and water (Fig. 285) to the *Free City of Danzig* on the shore of the Baltic Sea.

Czechoslovakia. *Czechoslovakia* is one of the richest agricultural countries of Europe. Although it has more than half as many farms as there are in the whole United States, it is only about the size of Illinois. Like the countries in western Europe which we have studied, this country produces fruits, grains, and sugar beets, and raises a great deal of live stock. The amount of foodstuff produced is so great that large quantities are exported each year.

The population is made up of three closely related peoples, the most important of whom are the Czechs or Bohemians. A long time ago Bohemia was an independent country, but its people were conquered and held by



Brown Bros.

FIG. 285. A river scene in Poland. The river shown here is the Vistula, a trade highway. The castle is on a hill in the city of Cracow. Why do people not build walled castles today as they once did?

the Austrians. The World War gave them their freedom again.

Czechoslovakia is rich in valuable minerals, especially coal and iron. It has many small factories, most of which make goods for home use. While this country has no seacoast, it easily carries on trade by means of the *Elbe* and *Danube* rivers. Since the World War these rivers, which flow through Germany, are free trade highways for all countries in Europe.

The people and their cities. The people of both Poland and Czechoslovakia are closely related to the Russians, but are more enterprising, and a larger number of them are educated. Because in the United States they find greater opportunity to make a good living, many people have come here from these two countries in recent years.

The capital of Poland is *Warsaw* on the *Vistula River*. It has about as many people as Detroit, and is well situated in the midst of a broad, fertile plain. Warsaw is also an important manufacturing city. Another old and historic city is *Cracow* (Fig. 285) on the *Vistula*.

Praha (Prague) is a leading city of central Europe. It is the capital of Czechoslovakia, and is a little smaller than Warsaw.

SOME RELATED PROBLEMS

1. Why does the western part of the Great Lowland Plain of Europe contain more people than the eastern part?
2. Why does Marseille have less commerce with America than Havre?
3. At what time of the year would you like to visit northern France? Give your reasons.
4. Why did the United States have to furnish the Allied Nations so much food during the World War?
5. Why do many farmers of the Netherlands carry their produce to market in boats?
6. Why is the free use of the Elbe and Danube rivers a great advantage to the people of Czechoslovakia?
7. Why are there usually few large cities in regions of large farms?
8. Why are wooden shoes more useful in the Low Countries than in our country?
9. Why is it easy to carry on trade between the cities of France?
10. What country in the Western Hemisphere belongs to the Netherlands?
11. Why are farms so much smaller in Europe than in the United States?

SOME THINGS TO DO

1. Try to find pictures illustrating all these countries. Arrange in five groups, agriculture, manufacturing, cities, scenic features, and national costumes.

135. GERMANY

SOME THINGS TO LEARN

1. Why agriculture has been made so successful in Germany.
2. How the Germans developed manufacturing.
3. Why many cities in Germany are so well known.

Why agriculture is a leading industry. The northern half of *Germany* lies in the Great Lowland Plain and is the chief farming section. From this plain the land rises toward the south to the foot of the Alps (Fig. 260). Most of southern Germany is in the Central Upland region, where forests cover a large part of the area (Fig. 293).

The west winds from the Atlantic, blowing over the Great Lowland Plain, bring moisture far inland into Germany. The summer, therefore, is favorable for crops, but the winters are cold, and grow more severe toward the east. As one goes south the climate does not grow warmer as it does in our country, because the surface of southern Germany is higher and therefore cooler.

The soil is generally poor, but by careful farming methods and by the use of fertilizers it yields good crops of grain, hay, potatoes, and beets. The fertilizers used are furnished by the mines of the country.

The best grain crop for poor soil is rye, and large quantities of this grain are raised. Much "black bread" made of rye, therefore, is eaten in Germany. The chief crop grown is potatoes, which are eaten by men and animals and are also used in making alcohol. Barley is raised for making beer and for stock food. In the warmer valleys vineyards are found, and much wine is made.

German farmers also raise large numbers of domestic animals, cattle and swine being the most numerous. Germany, though a small country, has long had a large population. In the city of Berlin alone there are nearly four million people (Fig. 286). The German people, therefore, have tried to produce as large a part of the necessary food as possible, especially grain and meats.

Why manufacturing has been developed

Before the World War, Germany was one of the most powerful countries of Europe famous for its industries and commerce. It had large possessions in Africa and the Pacific which have now all been lost. A great deal of land once German is now part of Czechoslovakia, Poland, or France. Besides losing land area, the nation has also lost its position as one of the great nations of the world. This position was due in part to the rich coal and iron mines that made many kinds of manufacturing possible.



Ewing Galloway

FIG. 286. Along a canal in Berlin. Berlin is one of the largest cities in the world. It is the center of a network of railroads and canals. Like New York and Chicago, it has elevated railroads.

Germany always depended on the rest of the world for much of the raw materials, other than coal and iron, which were used in its factories, and among other raw materials imported great quantities of cotton, wool, rubber, and hides.

In certain lines of manufactured products Germany led the world because the Germans not only possessed the secret of how to make these things, but were able to produce them cheaply. This was especially true of dyes, and our country depended almost entirely on Germany for its supply. Manufacturing for export naturally ceased during the World War and has not yet been fully revived. Germany has always wisely cared for her forests, replanting them so that as fast as old trees were used young trees were taking their places. In this way the German forests continue to furnish lumber for furniture, wood carving, and paper.

Another reason for Germany's success in manufacturing was due in part to the excellent means for inland trade, together with direct and easy ways of reaching North Sea ports. The rivers are so connected by canals that transportation by boat, although slow, is almost as easy as by rail. The Rhine (Fig. 263) and its valley are highly prized by the Germans; the river because of its navigability, and the valley on account of its fertile soil, its favorable location for industries, and its historic castles and cathedrals.

The German government did much to encourage manufacturing; railways were constructed, canals were dug, and a fine fleet of merchant vessels was built. These merchant vessels were used to bring in raw materials and to carry manufactured goods to every part of the world. Most of the vessels in the merchant fleet of Germany were lost as a result of the World War.

The people and their cities. Germany is not so large as France but it contains a greater population. The Germans are an industrious people, for they have been well trained in the excellent schools. Those who come to this country make successful farmers or prosper in business, largely because they have been taught to be industrious and thrifty.

The capital of Germany and its business center is *Berlin* (Fig. 286). The city proper has about the same population as Philadelphia, but with its suburbs it is about twice as large. It is the greatest railway center in the country. *Essen* has become a great steel city, because of the near-by coal and iron mines.

The North Sea coast has no good harbors, but *Hamburg* on the Elbe and *Bremen* on the Weser are great river ports and the homes of leading steamship companies. Hamburg is the second city of the country.

The old town of *Leipzig* is famous for book printing and for its university. *Dresden* has a great art gallery, and *Nürnberg* is known the world over for the making of toys. *Cologne*, *Munich*, and *Breslau* are all industrial cities, the first two being larger than San Francisco.

136. UNION OF THE SOCIALISTIC SOVIET REPUBLICS: RUSSIA

SOME THINGS TO LEARN

1. The new form of government which followed the Russian Revolution.
2. How the climate of eastern Europe varies from north to south.
3. Why the people of this area are farmers.
4. Why manufacturing had not been developed in Russia.
5. Why the Russian Empire wanted a seaport on the Pacific.
6. Why so many of the Russian people are not educated.
7. Things that are of interest to travelers in this country.
8. Why Ukraine is a great wheat region.

The size and government of the Union

The great area formerly known as *Russia* is over half as large as the United States. At one time Russia occupied almost half the continent of Europe. Before the World War the Russian Empire extended from the Baltic Sea eastward through Europe and across Asia to the Pacific. During the World War a revolution occurred, and a new government was organized. The leaders at first hoped to form a republic much like the United States, but later leaders had other ideas as to how this great area should be managed. As a result there are a number of small republics loosely united into the *Union of the Socialistic Soviet Republics*, the future of which is uncertain.

The new government has not yet been recognized by many nations as being permanent. Because there is no feeling of security, the farms are not being worked the best way, industries are not prospering, and the people have little to work for. The great resources of the country are not being developed and are of little use either to the Russians themselves or to the rest of the world. Other countries need the wheat, oil, and minerals which could be produced in abundance in many sections, and the people need the manufactured goods which could be secured in trade.

Some influences of surface and climate

The whole of eastern Europe lies within the Great Lowland Plain and rises only a few hundred feet above the sea at its highest point. Three of the chief rivers of the continent flow away from the high area of the *Valdai Hills*. The *Dnieper* reaches the Black Sea, the *Volga* (Fig. 287) empties into the Caspian, and the *Western Dvina* flows to the Baltic. Between Europe and Asia lie the low *Ural Mountains*, beyond which is Siberia.

The area in Europe included in the Soviet Union extends northward into the Cold Cape. The southern section is due east of the Gre-



Ewing Galloway

FIG. 287. **Boats on the Volga River.** The Volga is the largest river of eastern Europe. Why is water transportation from the Volga to the sea difficult? What river in the United States is suggested by this picture?

akes. The summer here is similar to that of the northern states of the Mississippi basin, but the winter is much colder. The northern section, with its scrubby trees and short summers, is much like the area around Hudson Bay (Fig. 288). To the south of this area of scrubby trees are the vast forests of valuable timber, and still farther south the rich farm lands. That part lying near the Caspian Sea is very dry and in many ways resembles parts of New Mexico and Arizona.

Why most of the people are farmers. The Soviet republics in Europe have almost as much tillable farm land as the United States. This great agricultural area extends from the Caspian Sea west almost to the Atlantic, and from the forest region on the north to the Black Sea on the south.

The black-earth country. The richest section of old Russia, *Ukraine*, lies in the southern part of the Great Lowland Plain. This area is a little larger than France, and has about three-fourths as many people. Ukraine is in every way fitted to be a food-producing area. Its gentle slopes, rich, black soil, dry, cold winters, and warm summers with sufficient rain for varied crops remind us of parts of our own Great Plains. This is



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FIG. 288. **A Russian village in winter.** What in the picture shows that this village is near a forested region? Why do you think there are no large trees in the forest?

one of the great wheat regions of the world. Oats, barley, rye, maize, potatoes, and sugar beets are also grown here. But farming is not so successful as it might be in so rich a region, for agriculture is carried on in a very primitive way. The people are not educated and have no chance to learn how to use modern machinery which would help them to produce larger crops.

Because of its varied climate and large areas of good soil, this part of Europe could produce a great variety of crops. Before the World War it was one of the great wheat



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FIG. 289. A view of the city of Saratov on the Volga. This is one of the large cities of eastern Europe. Transportation in this region is chiefly by boat. The white buildings with the large towers are churches.



By Burton Holmes from E. Galloway

FIG. 290. One of the many churches of Moscow. Usually the churches are the most beautiful buildings in Russia.

producing countries of the world, and also raised large crops of flax, hemp, rye, oats, and potatoes.

In southeastern Europe are grasslands, called *steppes*. These are too dry to farm, but support great herds of cattle and horses.

The Russian peasants are a hard-working, uneducated people. When the nation is more united and the people become better educated they will be better farmers, and manufacturing and commerce will grow more important. The Soviet republics, with their vast resources, should some day rank among the great countries of the world.

The place of mining and manufacturing.

Eastern Europe is rich in three rock products, coal, iron, and petroleum, so important in all forms of industry the world over. South-eastern Europe is one of the great oil regions of the world. All these resources, however, are little developed and supply only a small part of the world's needs.

Old Russia was never a manufacturing country, although before the World War it made nearly enough textiles for home use. The wool used was grown at home, but almost all the cotton had to be imported.

Manufacturing in the Ukraine consisted mostly in milling wheat into flour and making sugar from sugar beets.

The difficulties of carrying on commerce.

Eastern Europe has many long navigable rivers connected by canals (Figs. 287, 289).

These waterways were well developed long before the days of railroads. As Russia was slow in developing its natural resources it did not need as many miles of railroads as the United States. Good roads were few, and inland trade was carried on with difficulty. The greatest development of agriculture was along the Trans-Siberian Railroad, which Russia built to reach ports on the Pacific coast. This route gave Russia an outlet to the ocean even in the winter, when the Arctic Ocean to the north was frozen.

Trade by way of the Black and Baltic seas has always been hampered because vessels sailing from ports on these seas in order to reach the ocean had to go through waters controlled by other countries. In times of war these waters could be closed, and thus Russia was often shut away from routes leading to the great markets of the world.

The people and their cities. Before the World War, Russia, although made up of people with many languages and interests, was held together as a nation because the government was centered in the czar.

But in spite of its size and great population, it never was one of the leading nations of the world. The people had little or no voice in the government. They were allowed to remain ignorant because then they could be the more easily ruled. Yet, in spite of these bad conditions, they were slowly developing their many resources.

Because Russia was largely an agricultural country without much manufacturing, there were few large cities. *St. Petersburg* was the capital and largest city before the World War, but since then the capital of the Union has been moved to *Moscow* and the name *St. Petersburg* changed to *Leningrad*. The city has lost much of its former greatness and population.

Because of its location, *Moscow* is naturally the great railway center of eastern Europe and the chief manufacturing and trading

city. The city has good trade routes by water as well as by rail. It is near large forests and coal deposits, and is the center of a great agricultural region. Here cotton, woolen, and linen goods are manufactured.

Odessa, on the shore of the Black Sea, is the largest milling city and chief seaport. Its population is about the same as that of *Pittsburgh*. *Kiev*, on the Dniester, is the center of the beet-sugar industry.

Features of special interest. Although the people of Russia were poor, the country had many beautiful churches. Even small towns had stately churches. *Moscow*, the "Holy City," has more than five hundred (Fig. 290).

In the forested region of Russia (Fig. 288) the people live in log houses much like those built in some sections of the United States in early days.

Much of the area is so flat that there is a great deal of marsh land which in the rainy season cannot be used for travel. In winter these marshes freeze over, and traveling across them is then made easy by sledges.

One of the interesting features of Russia was the great fairs held every year in certain cities. These fairs are still held, and here the people and traders from many countries come together to buy and sell. Visitors to these fairs always find much to interest them.

137. THE BALTIC COUNTRIES

SOME THINGS TO LEARN

1. The natural features that add to the beauty of Finland.
2. In what ways the Lapps are like the Eskimos.
3. Why the Baltic countries are mainly devoted to agriculture and lumbering.
4. Facts about the leading cities of the Baltic countries.

Finland: Land of a Thousand Lakes. While *Finland* is called the "Land of a Thousand



Thompson

FIG. 291. Lapps of northern Europe.

Many Lapps move their home as the seasons change.

These Lapps are journeying to a new camping ground.

They hope to find plenty of food for their reindeer herds.

Why do you think one reindeer wears a bell?

In what part of America are reindeer found?



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FIG. 292. The great Sunday market in Helsingfors, Finland. What should one expect to find for sale in a market of this kind? What shows that this is near the water front?

Lakes" it contains many more than that, and in this respect reminds one much of Maine or parts of Wisconsin or Minnesota.

Lying so far north in the Great Lowland Plain, Finland has extremely cold winters and short Summers. Here, as in similar regions in northern Europe, a large part of the country is covered with forests from which timber, wood pulp, and paper are

exported in large quantities to the countries of western Europe.

Finland is a country of small farms (Fig. 266) on which are grown cool-climate crops like rye, barley, oats, potatoes, and hay. Farm animals are raised, and butter is one of the chief articles exported.

Finland manufactures some leather products and textiles for home use. Machinery is one of the leading imports.

In northern Europe, especially in Sweden and Finland, there lives an interesting people often called the "Eskimos of Europe." These people are the Lapps, who live much as do the Eskimos of North America, because the climate is similar (Fig. 291). The animal upon which they chiefly depend for food and travel is the reindeer. It was from this region that reindeer were brought to Alaska many years ago.

Finland is a little larger than Norway and has a few more people. *Helsingfors* (Fig. 292) is the capital and chief city.

Lithuania, Latvia, and Estonia. Several hundred years ago *Lithuania* was a great nation. The country extended from the Baltic to the Black Sea. Then it became a province of Russia. After the Russian revolution of 1917 most of the country again became independent. The Lithuanians are

agricultural people, raising grain, flax, potatoes, swine, and sheep. They are also engaged in poultry farming and beekeeping. The grain, flax, foodstuffs, and animals are exchanged for manufactured goods. *Kovno* is the largest city, and *Memel* is the chief port.

In recent years many Lithuanians have come to the United States to make their homes. Kosciusko, who came to America and helped the colonists win the Revolutionary War, was one of the great men of Lithuania.

Latvia, the country of the Letts, is a flat land, much of which is forested. Lumbering and agriculture are the chief occupations. The country is well situated for trade, because of both its river routes and ports. It is a nation of well-educated people who are rapidly developing their industries. Its manufactures of wood and metals are growing in importance. *Riga*, the capital and chief port of the country, is about the same population as Denver. *Estonia* is about one-half as large as the state of Indiana and has one-third as many people. It is a small country and in many ways is similar to Latvia. Farming and lumbering are practically the only occupations of the people. The crops are much the same in the two countries. The capital of Estonia is the small city of *Revel*.

SOME RELATED PROBLEMS

1. Why are Germany and Russia smaller than before the World War?
2. How may Baltic ports be reached from the North Sea?
3. Why is there so much greater variety of climate in Russia than in Germany?
4. Why is the North Sea coast of Germany more valuable for commerce than the Baltic Sea coast?
5. Why are there more large cities in Germany than in Russia?
6. Why are not the White Sea ports as valuable as Black Sea ports?

7. What section of our country is most like Finland? How do the two differ?
8. Why is Odessa a more important wheat port than Riga?
9. Why do people in countries with few railroads hold fairs?

SOME THINGS TO DO

1. Try to find pictures of this part of Europe and arrange them by countries. Magazines, newspapers, and post cards will furnish material.
2. Make a booklet in which are drawn as many of the flags of European nations as you can find. Be sure to make them large enough to show shapes and colors. Some dictionaries have color plates showing the flags of all countries.

THE HIGHLANDS AND PLAINS OF CENTRAL EUROPE

138. THE ALPINE COUNTRIES: SWITZERLAND AND AUSTRIA

SOME THINGS TO LEARN

1. Why Switzerland may be called the "Playground of Europe."
2. Why Austria is today so small a country.
3. How the Alpine pastures are used.
4. What are the leading cities of the Alpine countries.

The scenic features. The Alps more than any other region of Europe have long been visited by tourists (Figs. 262, 293). Easily reached from all parts of western Europe, the high mountains, with their many beautiful lakes, glaciers, and valleys, are visited at all seasons.

Glaciers are slow-moving masses of ice that creep down the valleys from the snow fields above. The snow high in the mountains does not melt in summer. Year after year the snow packs down and becomes ice, and gradually forms a thick glacier. Glaciers are found in other parts of the world. We have several glaciers in our United States and more in Alaska, but those of the Alps are the most famous in the world.



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FIG. 293. A scene in the Bavarian Alps. The Bavarian Alps are in southern Germany. Of what is the house built? What tells us that timber is abundant here?

Within the Alpine highland are many lakes, known the world over for their beauty. The best known of these are *Lake Geneva*, *Lake Constance*, *Lake Lucerne*, and *Lake Como*.

Switzerland: the Playground of Europe.

So many people visit *Switzerland* each year to enjoy the scenery or to engage in sports, that caring for tourists has become a flourishing business. Often the yearly profit from this business is greater than that from any other occupation. Tourists will not visit a country, however beautiful it may be, unless they can be well cared for. There must be good hotels and good roads, and entertainment must be provided for those who do not care for walking tours or mountain climbing. The mountain climbers must have guides to help them in following the trails over mountains or glaciers. Thus a great number of people are busy caring for the visitors at even one large hotel in *Switzerland*. The hotels are busy both summer and winter, for the mountains of

Switzerland provide a pleasant playground the whole year around.

Visitors to any country like to buy souvenirs to remind them of their journey. The Swiss have always been famous for their wood carving (Fig. 294), and many find employment in carving animals or other objects to sell to the tourists. Some Swiss carvings are really wooden statues or pictures.

Other occupations. About a third of the country is devoted to agriculture, especially to dairying, and both cheese and condensed milk are sent to other countries. It was *Switzerland* that gave to the world milk chocolate, now so generally found in all parts of our country. In many sections of *Switzerland* the people have little to do during the long winter months. They therefore make fine laces and embroideries by hand. Their skill is so great that these goods are important products of the country. In the larger cities watches and clocks are made. Swiss watches are known and used the world over.

A united people with four languages. In that portion of *Switzerland* bordering France, the people speak French; in that lying next to Germany, they speak German; in the area bordering Italy, the Italian language is spoken; and in eastern *Switzerland* there is a small group of people who speak a language (Romansh) that differs from all the others. Yet these people are all Swiss, and are all proud of their little country.

Switzerland has long been known for its great men. Perhaps the best known to us is Louis Agassiz, who came to this country when a young man. He devoted his life to the study of nature and made the stories of the rocks, plants, and animals better known to us. *Switzerland*, like ancient Greece, may well be called a "great little country."

Important cities. *Zurich* is the largest city of *Switzerland*. It is a little smaller than

FIG. 294. A picture of a Swiss wood carving.

This carving is quite like a picture.

Notice how clearly the wood carver has brought out the figures and the foliage of the trees. Can you see the grain of the wood?

See if you can find out what tools are used by the carver. Could such a carving be placed on the doors of houses?



Geneva and is a leading center for the manufacture of silks. *Geneva* is the meeting place of the *League of Nations*, and is the center of the Swiss watch industry. *Berne* is the capital of Switzerland.

Austria: a small part of a former great empire. Previous to the World War in 1914 the empire of Austria-Hungary was the second largest country in Europe. Within its borders many different races of people, speaking many languages, lived under one government. Today *Austria* is a small country only about half as large as New England and about one-fourth the size it was before the war. Its people for the most part speak German.

As a result of the World War, Austria lost much of its agricultural land and industrial area. Agriculture consists largely in raising grains, but now only about half enough is produced to feed the people. A few kinds of manufacturing, especially the making of machinery, are now the only industries of importance.

Except a small area in the north within the Central Upland, most of Austria lies in the region of the Alps. But none of the country lies on the south slope of the Alps.

The Alpine portion of the country is not quite so high as in Switzerland, but it has the same magnificent scenery. All of Austria is drained by the Danube.

The Alpine pastures. In the Alpine region the people live in the lower valleys. Here they have their small fields, their gardens, and the sheds in which they store hay for their cattle, sheep, and goats to be used during the winter.

In the spring, after the snow begins to melt, the lower valleys become green with grass. This season of the year is welcomed with joy, since for many months it means a free outdoor life. The boys and older men take the cattle, sheep, and goats into the green valleys to feed. As summer approaches the herds are taken up higher.

In each pasture the herders have huts, usually made of stone, in which they live during their summer stay. When autumn comes on and the weather begins to get colder, the herds are taken back to the lower valleys and the herdsmen are again with their families in their winter homes.

Vienna is the capital and largest city of Austria (Fig. 295). It is one of the large cities of the world, having nearly two million



FIG. 295. The Danube Canal in Vienna. Vienna is one of the great cities of the world. Of what other European city have we seen does this picture remind you? Why is a park built beside the stream?

Photograph by Elmendorf, from E. Galloway.

people. It is located on the Danube, and has long been one of the world's most famous cities. Vienna is not only the chief trade and business center of the country, but it is also a world center for art and music.

139. THE PLAINS OF THE DANUBE: HUNGARY AND ROMANIA

SOME THINGS TO LEARN

1. The names and descriptions of two plains along the Danube.
2. Why Hungary is a good corn and wheat country.
3. Why Romania was brought into the World War.

A grain region. Hungary and Romania occupy the plains of the Danube. The basin of this great river is mostly a great plain extending from the border of Austria to the Black Sea, except for a narrow mountain region through which the Danube flows on its long way to an outlet. This strip of mountains separates the upper plain, known as the *Hungarian Plain*, from the lower or *Wallachian Plain* (Fig. 259). Both these

plains have a fine, rich soil which produces good crops. The climate of this region is similar to that of Kansas and Missouri, although the rainfall is not so certain. Like these states, Hungary and Romania are great grain-producing sections.

Hungary: a European corn country. Once Hungary formed a part of the old empire of Austria-Hungary. Now it is a small country about the size of Indiana and with a population a little less than that of New England. The country occupies the Hungarian Plain surrounded by mountains on all sides. The soil is rich and most of the rain falls in the summer. Hence Hungary is a good region for wheat and raises more corn than any other European country.

In the east and southeast are extensive grasslands, and here are raised great herds of cattle and sheep. Swine are also raised in large numbers and are fattened on corn.

Near a great bend in the Danube stands *Budapest*, the capital of Hungary. As it is the center of a great wheat region, the manufacture of flour is the leading industry here.

Romania. *Romania*, more than twice as large in area as it was before the World War, is now about the size of New Mexico. The great curving chain of the Carpathians cuts the country into two parts. The south and east portions lie in the Wallachian Plain (Fig. 259), in the valley of the lower Danube. Most of the remainder of the country is in the rugged plateau of Transylvania lying to the west of the Carpathians.

Because this part of Europe is an inland region, the summers are very warm and the winters severely cold. The rainfall comes in early summer, and there is much sunshine. These features, together with the rich black soil of the plains and lowlands, make Romania one of the great wheat-growing sections of Europe. Corn, barley, oats, and tobacco are also raised in abundance. In the highlands stock raising and lumbering are carried on. The most valuable resource of the country is the oil which is found in the region bordering the Black Sea.

Romania now supplies many European countries with coal, petroleum, and grain and was brought into the World War largely because her crops were needed by some of the warring countries.

Bucharest, about as large as Seattle, is the capital and chief trade center. It is the home of most of the wealthy landowners of the country. The majority of the people of Romania, however, are farmers.

SOME RELATED PROBLEMS

1. What do the Swiss have in abundance that they can use for power instead of coal?
2. What are some of the things that the Swiss import? How do they get the money to pay for imports?
3. Why is mountain climbing so dangerous?
4. Why is it more convenient for mountain people to make condensed milk or milk chocolate than to sell fresh milk?
5. What are the occupations of the Swiss people who profit from tourists?

6. Why does the way the Danube flows keep it from being a great commercial route?
7. What city in the United States is in many ways like Budapest?

SOME THINGS TO DO

1. Try to find a grocery store that sells Swiss cheese, and compare its flavor with that of American cheese.
2. Find out what equipment a mountain climber needs, and for what each of these articles is used.

THE PENINSULAS OF SOUTHERN EUROPE

140. THE BALKAN COUNTRIES, ITALY, SPAIN, AND PORTUGAL

SOME THINGS TO LEARN

1. The form of the land areas in southern Europe.
2. In what ways southern Europe is similar to California.

How the peninsulas are alike. Extending south from the great highlands of Europe are three large peninsulas (Fig. 259). The central portion of each is high and thinly peopled. At the foot of each higher central area are the valleys and the lowlands where are found rich agricultural areas, and most of the larger cities. In each peninsula the higher regions are devoted to grazing, the flocks and herds often being driven to lower lands in the colder or the drier season. These three peninsulas, the *Iberian*, the *Italian*, and the *Balkan*, are the portions of Europe in which trade and commerce first developed. Within their territory are many places of great historic interest. It was from a port of the Iberian Peninsula that Columbus set sail for America, and from this peninsula went forth also the early explorers who first made known Africa, South America, and the Pacific Ocean.

The climate of southern Europe varies greatly according to the distance from the

ocean and differences in elevation. In the lower areas the climate is much like that of California, with its mild, wet winters and warm, dry summers.

141. THE BALKAN PENINSULA: THE HOME OF WARS

SOME THINGS TO LEARN

1. Why several countries of the Balkan Peninsula are little known.
2. Facts worth knowing about Yugoslavia.
3. Facts about a famous product of Bulgaria.
4. Why the Albanians are herdsmen.



Thompson

FIG. 296. Serbian peasants shelling corn. How does their method of shelling corn differ from ours? Note the fruit hung in the sun to dry. What season is shown here?



Keystone View Co. Inc.

FIG. 297. Driving geese to market in Bulgaria. These geese will be marketed in Sofia, the capital of Bulgaria. For what are geese valuable?

5. Why ancient Greece was a leading nation.
6. Why so many nationalities may be seen in Constantinople.
7. Why we may say that Constantinople is a city at a crossroads.

Why a warring region. For hundreds of years the countries of the Balkan region have been almost constantly at war. These mountain peoples have had to fight for their homelands, which were desired by nations both to the east and to the west.

There has always been a great deal of jealousy among the Balkan peoples. Because they did not want a single strong nation to develop in southeastern Europe on the road to Asia, the large nations of Europe have encouraged the disputes between the several nations of the Balkan Peninsula.

During the World War, Balkan peoples were all fighting, either to protect themselves or to get more territory.

The region is rough and mountainous, and travel in the country is difficult. For this reason it has not been easy for the peoples to unite under one strong government and have the people of Switzerland.

Yugoslavia or Greater Serbia. Yugoslavia is a new country made up of the former kingdoms of Serbia and Montenegro, together with the southern part of the old empire of Austria-Hungary. This new country is about the size of Wyoming. Only the southern portion of Yugoslavia lies within the Balkan Peninsula.

About two-thirds of the people are engaged in agriculture (Fig. 296). The chief crops are corn, wheat, and plums. The plums are dried and sold as prunes. Many sheep, cattle, swine, and goats are raised. The swine range in the forests, feeding on the nuts they find there. Almost half the area of Yugoslavia is covered with forests, but not much lumber is produced.

Yugoslavia carries on trade with neighboring countries and has access to the great ocean.

highway by way of the Adriatic coast. Much of the foreign trade is carried on through Trieste, a city on the Italian coast.

Belgrade (Belgrade), the capital, is favorably situated on an important railway and at the confluence of two large rivers. It is the trade center for the carpets, cotton, and silk goods made in the near-by small towns. Belgrade is about half as large as Omaha.

Bulgaria: a land famed for its roses.

Bulgaria is more than three times as large as Belgium. About two-thirds of the people of Bulgaria are engaged in agriculture or in stock raising. The farm products are similar to those of Yugoslavia. Wheat, rye, oats, sugar beets, and tobacco are grown. Many sheep, goats, cattle, pigs, and geese are also raised (Fig. 297). But Bulgaria has long been known for its attar of roses, a rare perfume made from rose petals. This is now being produced in our own country.

The country includes the broad, fertile plains of the Danube and other river valleys and the rugged chains of the Balkans. Heavy forests cover the hills and mountains. Some mines of coal and iron are found in the mountainous regions. As the people depend mostly on the land for a living, there are few cities. *Sofia*, not quite half as large as Bucharest, is the capital and largest city, and the chief railroad and trade center.

Albania: a country of herdsmen. *Albania*, another Balkan country, is a small, mountainous region on the east coast of the *Adriatic Sea*. It is almost twice as large as Vermont. The people have had such a struggle to make a living and to keep their independence, because of troubles with their neighbors, that Albania is the least important of the Balkan countries. The Albanians are a liberty-loving race of mountaineers, engaged chiefly in herding. *Tirana* is the capital city and *Durazzo* the leading seaport (Fig. 298). **Greece: a historic country.** More than 3,000 years ago *Greece* was one of the leading



Ewing Galloway

FIG. 298. The harbor at Durazzo, Albania. The sea that is seen in the picture is the Adriatic. The town stands on a rocky peninsula.



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FIG. 299. A pasture scene in Greece. Greece is such a rugged country that much of the land cannot be farmed. What animal may thrive in mountainous countries? Why do you think that this is a dry country? What section of the United States has scenery and industries like those that are shown in this picture?

countries of the world. It was a great commercial nation and had many possessions in near-by countries. During those rich and prosperous times the people of ancient Greece developed architecture, sculpture, and learning to a high degree. As a result the country today is of special interest to tourists and scholars.

Greece is about equal in area to the state of Louisiana, and occupies that part of the Balkan Peninsula which extends farthest south. Although the climate of Greece is



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FIG. 300. Selling pottery in Constantinople. The stores open directly on the sidewalk or street and are very close together. Notice the headdress worn by the men. Do you know what this headdress is called?

dry and the surface mountainous, nearly one-half of the people are engaged in some kind of agriculture (Fig. 299). Olives, nuts, currant-grapes, and tobacco are the chief crops. The country is developing rapidly, as is shown by the building of railroads, the working of the mines, and the increase in interior trade.

The products of the fields and mines are exchanged in trade for food materials and manufactured goods. Because of the irregular coast line and the many islands, Greece has many fine harbors. *Athens* is the capital and chief city of Greece. It was a great city more than 2000 years ago. In and about Athens are ruins of ancient temples and buildings. Some of them have never been excelled in beauty of form or in ornamentation, and many of our modern buildings have been modeled after them. The *Parthenon* in Central Park, Nashville, is a reproduction of the *Parthenon* at Athens. Athens today is a little larger than Denver. *Salonika* is the second city in population and importance.

Constantinople and the international crossroads. At the close of the World War, *Turkey* in Europe consisted of only a small area on which stands *Constantinople* (Fig. 300). The Turks have since regained possession of a

portion of their old territory in Europe. *Constantinople*, which is not quite so large as *Cleveland*, is one of the large cities of Europe. It is also one of the oldest and most historic cities of the world.

Perhaps in *Constantinople* people from more races and nations mingle than in any other city in the world, because here the people from the eastern part of the Old World meet the people from the West.

Constantinople has always stood at a great international crossroads, the place where ships going from the Black to the Mediterranean Sea cross the caravan and railroad routes from Asia into Europe. This location makes the city a great market and trading center.

Because of the importance of this city many wars have been fought for its possession. The Turks held it continuously from 1453 to the close of the World War. For a few years it was an international city under the control of the League of Nations. Now it is again a part of Turkey.

142. ITALY: A SUNNY LAND

SOME THINGS TO LEARN

1. The best-known portions of Italy.
2. Where agriculture is best developed in Italy.
3. Why Rome is a famous city.
4. The names of some products for which Italy is famous.
5. Two facts worth remembering about each of four large cities in Italy.

The country and the people. *Italy* is a little smaller than Great Britain and Ireland and has about four-fifths as many people. Once Italy was the center of the most powerful nation in the world, famed for its commerce and for its conquests of other nations. Today Italy is a small nation and its people are largely engaged in farming, fishing, or in trade. Italy is famous not only because of its history, but because it has produced some of the world's greatest

ters, sculptors, and musicians. Some scientists, too, are Italians. Among them is Marconi, who invented the radio-graph.

Within recent years many Italians have gone to the United States. They usually live in or near cities. Some of them are merchants and business men, while many grow fruit or vegetables or engage in hard manual work.

The chief occupations. Agriculture is the chief occupation of the people living in the fertile plains near the coast and in the river valleys.

The valley of the Po River, usually known as the *Plain of Lombardy*, is the richest farming section in the country. Here flax, hemp, rice, and wheat are grown. This is also one of the leading regions of the world for the production of raw silk and in the raising of wine. Irrigation is used in raising crops, just as it is in California. Italy is one of the few European countries that can raise corn. It is raised as a food for man as well as for animals.

In the southern part of Italy and along the west coast, where the climate is warmer, oranges and lemons are grown. Some cotton is raised in the southern part of the country and on the islands of *Sicily* and *Sardinia*. Grapes are raised generally in the country. Much of the mountainous and rough land in Italy is used for pasturage.

Fishing furnishes a living to large numbers of people on the Adriatic coast. The fish are mostly used at home, for the Italians, like people in all warm countries, eat little meat. There is some mining of coal, iron, and other metals. But Italy is poor in coal and oil and has not yet made much use of the power that can be furnished by the many mountain streams. For this reason manufacturing has developed slowly. Italy, however, is rapidly increasing her manufactures of steel products and textiles, and each year

produces larger quantities of other products needed at home.

Cities and places of special interest. In any country with so long and interesting a history as that of Italy there are sure to be many places of special interest.

One of the most interesting places is the capital, *Rome*. Rome was also the capital of the great Roman Empire, which included all the land bordering the Mediterranean Sea.

Rome has been an important city for so long that it has gained the name of the "Eternal City." Rome is also the home of the pope, the head of the Roman Catholic churches of the world. The palace in which he lives is called the *Vatican*. Rome now contains about as many people as Pittsburgh.

In ancient times the location of Rome on the *Tiber River* meant a great deal, for the vessels of those early days were small and could easily enter this stream. But now Rome has little commercial importance because the Tiber is not navigable for the large ocean-going vessels of today.

Two of the most famous ruins of ancient Rome are the *Coliseum* and the *Forum*. In the Coliseum the people used to gather to witness the national games. It was a great open-air theater built in circular form with the play and contest ground in the center. The Forum was an open place in the heart of the city where the ancient Romans used to meet to hear public questions discussed.

The city of *Genoa* was the birthplace of Columbus, and it was from the harbor and the Gulf of Genoa that he gained his first ideas of a sailor's life.

Owing to its excellent railway connection with the northern countries of Europe by way of the *St. Gothard* and *Simplon* tunnels, *Milan* in northern Italy is the leading trade center. It is nearly as large as Cleveland, and is noted for its beautiful cathedral.

Near the mouth of the Po is the famous city of *Venice*, once the leading commercial



Ewing Galloway

FIG. 301. A beautiful palace and promenade in Venice.

The palace in this picture is one of the famous buildings of the world that all tourists visit.

How would you reach it if you were visiting the city?

Do you see the landings for the gondolas?

Would it be possible to have trees along such a street as this?

Why do you think the people are fond of their city?

city of the world (Fig. 301). It was built on a large number of islands, because people in early times fled to these islands to escape from their enemies. So the streets of Venice are canals, and travel and transportation are carried on by means of boats.

Naples is a commercial port on the west coast of Italy. Its beautiful harbor and its nearness to the great volcano *Vesuvius* make it a favorite city for tourists to visit.

Italy has two of the best-known volcanoes in the world. One of these is Mount *Vesuvius*, which has been active or in eruption at different times for two thousand years. The eruption of 79 A.D. buried two great cities. The other volcano is *Mount Etna* on the island of Sicily. During an eruption, the hot steam, lighted from the hot rock within, shines so brightly that *Etna* has been called the "Lighthouse of the Mediterranean."

143. SPAIN AND PORTUGAL: THE HOME OF THE EARLY EXPLORERS

SOME THINGS TO LEARN

1. Why so much of Spain has a dry climate.
2. Facts about the natural resources of Spain and Portugal.
3. How the people of the Iberian Peninsula are connected with American history.

4. How agriculture is carried on in Spain and Portugal.

5. Which are the leading cities in the Iberian Peninsula.

Where most of the people live. *Spain* and *Portugal* together occupy the Iberian Peninsula, which is so set off from the rest of Europe that it is not easily reached except by water. It is surrounded by water on three sides, but has few good harbors. On the fourth side is the high mountain wall of the *Pyrenees*, across which few roads have been built. Most of the people live in the narrow lowlands lying along a part of both the west and the east coast. Most of the country is a high, dry plateau which is thinly settled.

Extending nearly east and west on the plateau are many ranges of mountains called "sierras." Between the ranges are rivers running east or west. Thus the plateau is divided into belts of highlands and deep narrow valleys. This makes travel and transportation in any other direction than east or west difficult, and as a result there is little interior trade between the sections.

Because the western coast faces the wind of the Atlantic it is cool and moist in winter.

h like the coast of Washington or Oregon. The eastern and southeastern parts of the peninsula are dry, while the southern part, with its mild, wet winter and warm, dry summer, is much like California.

On account of its height, the central plateau is cold in winter and extremely hot with glaring sunlight, in summer. The plateau is also very dry. In these respects the highland area is much like New Mexico, Arizona and, like these states, is a grazing land.

The importance of agriculture. The Spaniards and the Portuguese, like the French, are chiefly an agricultural people (Fig. 302). There are two main agricultural areas, one along the west coast where the rain is plentiful and the other extending along the eastern and southern coasts where farming is carried on by irrigation. The fields in the irrigated sections of Spain and Portugal are so green that they are often called gardens.

The chief crops are much like those of California. Grapes, olives, oranges, and other tropical fruits are grown, but the climate and soil are so varied that Spain can also produce almost any crop of the temperate region. Many millions of mules, sheep, and goats are raised, mostly in the interior region of the plateau.

The mineral wealth. Although the highlands of Spain are rich in many valuable minerals, the Spaniards have not developed mining to any extent. Some of the rich mines which have been famous for many centuries are worked by men from other countries. Northern Spain produces coal and iron ore of a very superior quality. Much of the iron ore is sent to other countries in western Europe to be smelted. Silver, lead, coal, and copper are found in the south, and mercury is abundant in the central part. It is found in large quantities.

Nations once leaders of the world. The kingdoms of Spain and Portugal were once



Thompson

FIG. 302. Transportation on the roads of Portugal. This picture was taken in the agricultural area of Portugal. The large cask is full of wine, being carried to market. How do the wagon wheels differ from wheels you have seen?

powerful and rich and were, indeed, the leading nations of the known world. It was a king and queen of Spain who made it possible for Columbus to fit out an expedition which resulted in the discovery of America. Spain later sent many other expeditions to discover and seize rich regions in the New World. Spain once owned most of South America and much of North America. Spanish is today the national language of Mexico and of most of the countries of Central and South America.

Portugal also sent out noted explorers who made the world better known, and today Portuguese is the official language in Brazil.

These once powerful nations have now for several reasons lost most of their rich possessions. They occupied new lands only to gain riches, did not govern their colonies well, and did not develop their resources at home. The Spaniards have never made use of their vast mineral wealth while their neighbors, the English, French, and Germans, have become great industrial nations largely by developing their mineral resources. Manufacturing is not important in Spain and Portugal, except for textiles which are largely used at home.

Customs and habits. The Spanish people, like other people of warm countries, live



Photograph by Elmendorf, from E. Galloway

FIG. 303. **The rock of Gibraltar.** This great rock is at the southern extremity of the Iberian Peninsula. You are looking north. What continent is just behind you? What is the lighthouse for? What are the buildings on the higher level?

much of the time out of doors and have developed national games and sports which are attended by great crowds on each of their many holidays. There are so many holidays and feast days on which one must not work, that it is hard to get down to work on other days. As a result the Spaniards are not an energetic business people.

Leading cities. *Madrid*, the capital and largest city of Spain, is located in the center of the country on the plateau. The city is also a place of great historic interest. It has about the same population as St. Louis.

Lisbon, the capital of Portugal, is its first city. Although Lisbon has the better harbor, *Oporto*, which is closer to the vineyard and agricultural area, excels it in commerce.

Barcelona, on the northeastern coast of Spain is a textile city with about the same number of people as Boston. Barcelona is also the center of a great grape-producing area, and hence exports much wine.

Gibraltar (Fig. 303), a steep rock promontory at the southern extremity of the Iberian Peninsula, belongs to Great Britain. Here the British have built a great fortress to guard the narrow entrance to the Mediterranean Sea. Through this gateway passes

all the sea traffic between the Atlantic port and those of southern Europe and southern and eastern Asia.

SOME RELATED PROBLEMS

1. Why is southern Europe said to be in the Mediterranean region?
2. What cities in the United States are cross roads cities?
3. Why is manufacturing less important in southern than in northwestern Europe?
4. Where could you go in Europe to enjoy a winter like that of southern California?
5. Why are there fewer roads over the Pyrenees than over the Alps?
6. Why did Spain lose her valuable possession in America?
7. Why should the British wish to have great fortifications at the Strait of Gibraltar?

SOME THINGS TO DO

1. Find pictures of some ancient temples and buildings of southern Europe. Then find pictures of buildings in our country that are modeled after some of these famous types in the Old World.
2. Let members of the class represent different people of Europe. Work out a pageant wherein each pupil tells about the country he represents and why he came to America.



FIG. 304. A Relief Map of Africa



FIG. 305. A Physical Map of Africa



AFRICA—LONG THE DARK CONTINENT

144. WHAT THE RELIEF AND THE PHYSICAL MAPS SHOW Problems:

1. Why was Africa difficult to explore? (a) What great desert made entrance from the north difficult? (b) Would you expect the four large rivers of the continent to be a help or a hindrance to exploration? (c) Each of these large rivers has waterfalls and rapids near the coast. How would this affect entrance to the interior? (d) The climate near the Equator is very hot and rainy. How would this discourage explorers? (e) Central Africa was inhabited by tribes of savages and by many kinds of dangerous wild animals. How would this affect exploration?
2. Why would you expect Africa to have few regions with a temperate climate? (a) Through what part of Africa does the Equator pass? (b) What part of the United States is the same distance from the Equator as northern Africa? What kind of a climate would you expect in this northern section? (c) What part of South America is the same distance from the Equator as is South Africa? (d) Why would you expect the people of northern and southern Africa to have more industries than those of the central part of the continent? (e) Point out several places in Africa where the land is so high that the climate must be cold.
3. Study the maps, Figs. 305 and 306, and find out what rivers rise in the rainiest parts of Africa. (a) Which of these rivers is best known? Why?

Questions:

1. Name the continents that touch the Mediterranean Sea.
2. How is Africa separated from Europe? from Asia?
3. What two high peaks in Africa are near the Equator?
4. What great desert is in northern Africa?
5. How does Africa compare with North America as to size?
6. What islands are near the west coast of Africa? near the east coast? To whom do these islands belong?
7. Name the larger lakes of Africa.

Essential names and places:

Study the maps, Figs. 304 and 305. Be able to name and point out the following on an unlettered map of Africa: Nile, Congo, Niger, and Zambezi rivers; Atlas Mountains, Mount Kenya, and Mount Kilimanjaro; Sahara and Kalahari deserts; Gold Coast and Ivory Coast; Suez Canal; Madeira, Canary, and Cape Verde islands and Madagascar; Red and Mediterranean seas, Gulf of Guinea, and Mozambique Channel; Cape of Good Hope; Lakes Chad, Victoria, and Tanganyika.

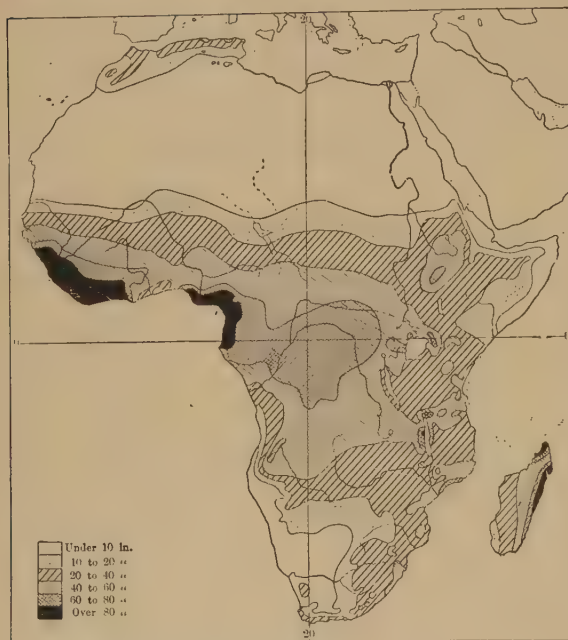


FIG. 306. A rainfall map of Africa. What is the name of the large dry area in the northern part of Africa? In what countries are the areas of heaviest rainfall?

145. WHY AFRICA WAS LONG CALLED THE DARK CONTINENT

SOME THINGS TO LEARN

1. Why the ancient Egyptians did not explore more of Africa.
2. Why Africa was once called the "Dark Continent."
3. Three reasons why it has been difficult for white men to explore Africa.
4. How the Cape-to-Cairo Railroad will help in the development of Africa.

Ancient civilization. For thousands of years northeastern Africa has been inhabited by white people. Before Rome, or Athens, or Constantinople was built, *Egypt* was a flourishing country. It did not, however, extend very far to the south.

The influence of the great desert. Ancient Egypt occupied the lower *Nile Valley*, which was separated from the rest of the great continent by the vast *Sahara*, the greatest desert in the world (Figs. 1, 304). The rich forests and grasslands of central Africa were then unknown. The great nations of the

world of that day were all north and east of the Mediterranean. The Egyptians traded with these nations and did not need to explore new lands.

Rivers did not encourage exploration. For many reasons it has been difficult to explore and settle Africa. Much of it was long unknown, and until very recently it was called the "Dark Continent." Even today some of it is little known. But that is true even of parts of North and South America.

From the map of Africa (Fig. 305) we may learn that nearly the whole continent is highland, extending on all sides almost to the sea. Great rivers, the *Nile*, the *Congo*, the *Niger*, and *Zambezi*, flow from the highland to the lower regions nearer the coast. They are all interrupted by waterfalls and rapids. Hence they did not offer easy highways, as did the rivers of America when our country was being opened up. So explorers seeking to enter by way of these rivers found traveling both difficult and dangerous.

The unfavorable climate. Another reason why Africa remained so long unknown to white men is the unhealthful climate. Since most of the continent is in the Hot Belt, the climate of central Africa is hot and wet, like that of the Amazon Valley (Fig. 306). And like that part of South America, central Africa is still a region in which white people find it difficult to live and keep strong and well.

Dangerous wild animals and savage natives. Early explorers faced two great dangers in central Africa—the savage people and the fierce wild animals, such as the lion and rhinoceros. These dangers still exist in parts of Africa even today. Central Africa is peopled by tribes of savages, many of whom do their best to keep white people from coming into their country. Some tribes have become friendly and have been helped by the white settlers in many ways. In the wilder and less well-known sections it is still necessary for explorers to travel in large parties.

they must always be ready to meet attacks from both men and animals.

A great transcontinental railroad. In spite of dangers and difficulties, Africa is becoming better known and its riches are being developed. More and more of the country is being settled. Telegraph lines now reach the length of the continent from north to south. It is now possible to travel almost all the way by boat and train from Cairo, Egypt, to Cape Town, South Africa. But for a long time to come it is probable that southern Africa will carry on its trade with Europe largely by means of the ocean.

146. FEATURES OF SPECIAL INTEREST

SOME THINGS TO LEARN

1. Facts about ancient Egyptian monuments.
2. Why the Suez Canal is more famous than the Soo Canals.
3. How Niagara and Victoria falls differ.
4. How and where the Pygmies live.

The antiquities of Egypt. Visitors to Egypt are especially interested in the monuments and ancient tombs (Fig. 307) and the written records from which we can learn so much about how the people of ancient Egypt lived. Some of these tombs are more than 3000 years old. Always with a Pharaoh or great king there were buried many beautiful objects that he had used in his lifetime. Chariots, clothes, furniture, and beautiful ornaments found in the tombs are today as perfect in color and form as when buried.

The best-preserved and longest-known tombs are the great *pyramids*.

Another object of great interest in Egypt is the *Sphinx* (Fig. 308), which is perhaps older than the pyramids. It is made of stone and represents the body of a lion with a woman's head. It is 66 feet high and 175 feet long.

These monuments show that the people of ancient Egypt were skilled builders and knew how to raise stones that would be hard to handle even with modern machinery.



Photograph by Elmendorf, from E. Galloway

FIG. 307. The great obelisk at Luxor, Egypt. On this monument may be seen some ancient Egyptian writing. In New York City is an obelisk similar to this one, and there is also one in Paris. Each of these obelisks was brought from Egypt.



Photograph by Elmendorf, from E. Galloway

FIG. 308. The Sphinx, and a pyramid, Egypt. Notice the man at the base of the Sphinx. What suggests that it is hot here? What is such a hot, dry country called?

The Suez Canal. One of the most important canals in the world is the *Suez Canal* (Fig. 99), connecting the Mediterranean with the *Red Sea*. Before it was built all water commerce between England and the British

possessions in Asia and Australia had to take the long route around Africa. The opening of the Suez Canal shortened the water route from England to India by nearly 5000 miles. The canal is 87 miles long, and deep enough for the largest ocean vessels. It was completed in 1869. The northern end of the canal is at *Port Said* on the Mediterranean and the southern end at *Suez* on the Red Sea. These cities are important, since vessels must stop at them before entering the canal.

The world's greatest waterfall. We often think of Niagara Falls as the world's greatest waterfall. But the greatest falls in the world are the *Victoria* in the Zambezi River in southeastern Africa (Fig. 309). They are more than twice as high as Niagara, and in the wet or rainy season of the year the quantity of water which pours over the falls is much greater than at Niagara.



FIG. 309. **Victoria Falls.** How does the falls shown in this picture differ from Niagara Falls? What kind of a country is found above the falls?

The smallest people in the world. In the great forests along the Congo lives a race of black people who are only about four feet tall. These little folk, called Pygmies, are very skillful in using the bow and arrow, and secure most of their food by means of this weapon.

Large game animals. Central Africa is a favorite hunting ground for those who like what is called big-game shooting. The lion, elephant, hippopotamus, and rhinoceros are the most dangerous animals hunted for sport. They live in the vast grasslands that border the tropical forests of central Africa.

EQUATORIAL AFRICA

147. THE HOT FORESTS AND JUNGLES OF AFRICA

SOME THINGS TO LEARN

1. Why there are great forests in central Africa.
2. The reasons for the names Gold Coast and Ivory Coast.

Why there are great forests in the Congo Basin. We have already learned that the portion of Africa lying near the Equator, like the central portion of South America, is very hot and has a heavy rainfall. Just as the great Amazon drains South America, so the mighty Congo drains central Africa. The valleys of both rivers are largely covered with dense tropical forests and jungles where in some places the trees stand so close together that sunlight rarely reaches the ground.

In these forests are found the chimpanzee, gorilla, and many beautiful birds. The products of this region most valuable to man are rubber, bananas, and various hard woods.

How the Gold and Ivory coasts got their names. Just north of the Equator and the *Gulf of Guinea* are other great forests. The Niger is the chief river of this region, and its delta extends for hundreds of miles along the coast. This coast was, in early days of African trade, a source of gold. Here, too, ivory from the tusks of elephants was obtained. Hence a portion of this coast

has long been called the *Gold Coast*, and a near-by area the *Ivory Coast*.

From this section white men formerly shipped many native negroes to the West Indies and the United States to be sold as slaves. Although the names remain, the trade of this region has all been changed, for now little ivory or gold is found here, and the slave trade has long since ceased. This region now ships to Europe large quantities of cacao, coffee, rubber, palm oil, and valuable woods.

148. THE HOT GRASSLANDS OF AFRICA

SOME THINGS TO LEARN

1. The location and uses of the great grasslands of Africa.
2. Something about the people of the Sudan and how they make a living.
3. The names of several large animals whose native home is Africa.

The reason for the hot grasslands. North, south, and east of the hot forests of Africa are some of the greatest natural grasslands of the world. They are similar to the grasslands found along the Orinoco River and in Brazil, for in both continents the grass grows in the wet season and then dries on the stalk as the dry season comes on.

The Sudan, the "Land of the Blacks." The *Sudan* is that part of the great African grassland which lies between the hot forests and the Sahara. There are more black people living in Africa than there are white people in North America (Figs. 310, 311).

The people of the Sudan are largely engaged in stock raising, but agriculture can be developed by means of irrigation. Some cotton is raised.

The native home of the big circus animals. Many of the interesting animals that we see at a circus are natives of the grasslands and forests of Africa. Some of these, such as the zebra, antelope, gazelle, and gnu, live on grass and inhabit the open grasslands. The giraffe, with his long neck and long

front legs, feeds chiefly on the leaves of trees and shrubs.

The lion, tiger, hyena, and leopard usually live in the open forest near the edge of the grassland, for they prey upon the grassland animals for food. The rhinoceros is a grassland animal, too, but the elephant does not like the intense heat of direct sunlight, so he lives chiefly at the edge of the forest.

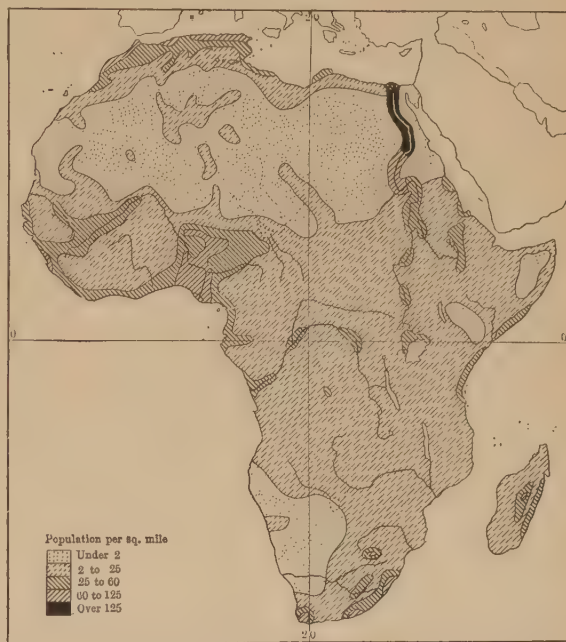


FIG. 310. A population map of Africa. Where is the most thickly settled area? Why is it in that part of the continent?

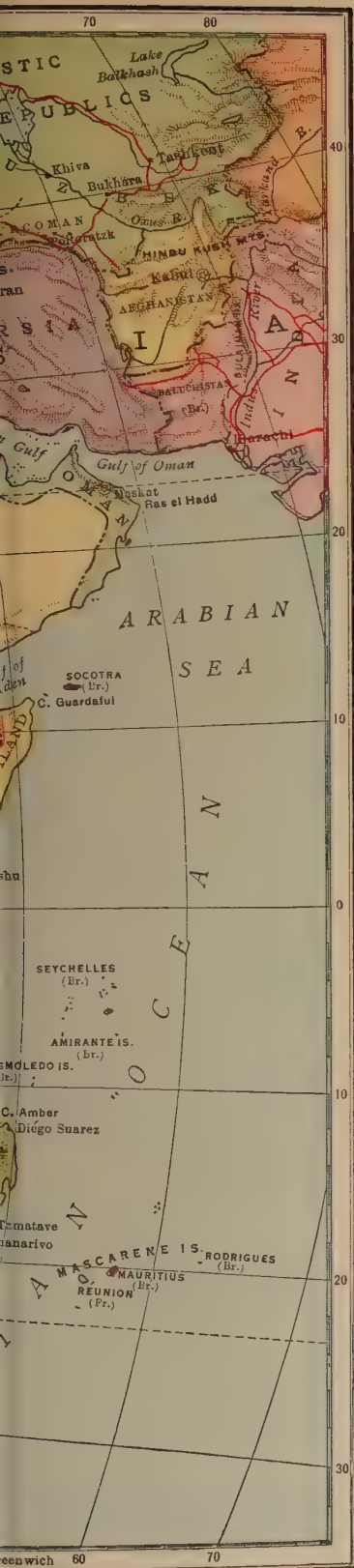


Ewing Galloway

FIG. 311. Village houses in central Africa. The village shown here is on the forested edge of the great grasslands of Africa. Why is a good roof for these houses necessary?



FIG. 312. A Political Map of Africa



149. WHAT THE POLITICAL MAP SHOWS

Problems:

1. Why have European nations secured colonies in Africa? (a) Point out the colonies which belong to each of these nations: France, Belgium, Portugal, Great Britain, Italy, and Spain. You can tell by the names or by the abbreviations in parentheses under the names. (b) What food and raw material can Africa furnish to Europe? (c) What things needed by the people of Africa do the countries of Europe produce?
2. Why are there so few railroads in many parts of Africa? (a) What does the physical map suggest as to the difficulty of building railroads between the east coast and central Africa? between Morocco and central Africa? (b) Where are the largest number of cities? the chief ports? (c) Why will a continuous railroad from Cairo to the Cape be useful? What products would you expect to be shipped over this railroad? Would you like to take a trip over this railroad? Why?
3. Why would you expect the people of central Africa to develop trade with outside countries, but not to trade much among themselves? (a) What do the people of central Africa need that they cannot produce for themselves? Where can they secure these things? Why do they not buy vegetables from northern Africa and wool from South Africa? (b) What products do they have to sell? What countries need these products?
4. Why is the Suez Canal one of the most important canals in the world? (a) How did the people of western Europe reach Asia by water before the canal was built? How far is it from London to Ceylon around Africa and how far through the Suez Canal? (Fig. 97.) (b) What European nations have possessions in east Africa, in Asia, and in the East Indies? (c) How does the Suez Canal help these countries? (d) What effect has the Suez Canal had on the amount of shipping carried on through the Mediterranean?

Questions:

1. What country controls the largest area in Africa? What one controls the next largest area?
2. Why was the great dam in the Nile placed at Aswan?
3. What cities of the United States are just as far from the Equator as Cairo and Alexandria?
4. Find out the greatest length and breadth of Africa by measuring how far it is from Cape Town to Cairo, and from Cape Verde to Cape Guardafui.

Essential names and places:

Study the map, Fig. 312. Be able to locate the following on an unlettered map; Egypt, Morocco, Tunisia, Algeria, Libya, Ethiopia (Abyssinia), Union of South Africa, Belgian Congo; the three national capitals; the following important cities; Tangier, Aswan, Alexandria, Port Said, Algiers, Tunis, Tripoli, Johannesburg, Kimberley, Dakar, and Cape Town.



FIG. 313. A house in an oasis. The oasis dweller often builds his house of sun-dried brick. Many houses in our southwestern states are built in the same way. What kind of trees are seen in the distance? Why may houses in this section be built with flat roofs?

TEMPERATE AFRICA

150. THE MEDITERRANEAN BORDERLAND

SOME THINGS TO LEARN

1. Why the Mediterranean region of Africa is well known.
2. What oases are.
3. Why transportation and trade in the desert is carried on by caravans.
4. What Egypt owes to the Nile.
5. The cause of the floods, and the time of year in which they come.
6. Why the British built the Aswan Dam.
7. Why the Nile Valley may be considered a great oasis.
8. The location and importance of the two chief cities of Egypt.

The California of northern Africa. We have learned in our study of Europe that the southern part of the continent has a climate similar to that of California. The northern coast of Africa, too, has a mild climate the whole year round, and receives most of its rainfall in the winter. The region of the *Atlas Mountains*, however, receives a much heavier rainfall than other places on the northern coast.

The chief countries in the northern part of Africa are *Morocco*, *Tunisia*, *Algeria*, and *Libya*, long known as *Tripoli*. The first three



FIG. 314. An ancient way of travel in Algeria. The women and children rode in the strange-looking covered saddle while the Arab walked beside his camel, carrying a gun for protection against robbers. In what way do you think the tall top might have been a help to the camel as he traveled along?

of these countries are under the control of France, while Libya, is under the control of Italy (Fig. 312).

There is much fertile land all along the coast and in the valleys north of the Atlas Mountains, but the farming is poorly done, for the people have few modern tools and know little about how to raise large crops. The most important products of northern Africa are dates, wine-producing grapes, figs, olives, and cork oak.

Many of the figs and dates are grown in the oases of the vast Sahara. An oasis is the name given to the fertile parts of a desert (Fig. 313). There is usually a spring in an oasis, and the water which comes to the surface of the ground is used to irrigate the date and fig trees. Date trees grow in all hot deserts, and dates, with milk products, form the chief food of the people.



FIG. 315. A city of Morocco. This city, Rabat, is located on an oasis in northern Africa not far from the Atlantic coast. Why do the people dress in white and have a covering for their heads?

Thompson

usually in order to reach these oases long journeys with camels must be made over the dry, sandy desert (Fig. 314).

A large number of camels and men usually travel together. Such a company of travelers is called a *caravan*. They travel in this way in order to protect themselves from attack by the native Bedouins and other tribes. Many of the Bedouins are fierce, warlike people who make their living in part by robbing and plundering desert travelers.

The chief coastal cities of this part of northern Africa are *Algiers*, *Tunis*, *Tripoli*, and *Tangier*. These cities are centers for a large caravan trade which is carried on with the people of the desert and the oases (Fig. 315). In these cities the products of the region are exchanged for cotton goods, sugar, tea, and machinery.

Egypt: past and present. Egypt, a large country in northeastern Africa, formerly belonged to Great Britain. In 1922 Egypt was given her independence, Great Britain keeping the right to protect the Suez Canal. Egypt is more than six times as large as Illinois and contains nearly twice as many people. It extends from the Mediterranean Sea southward nearly to the Equator.

Egypt, once the leading nation in the Old World, has always been a rich agricultural country. It owes its wonderful fertility to the Nile River and is sometimes spoken of as "The Gift of the Nile." Without this river, Egypt would be as dry and infertile as the great deserts lying all about. But the Nile regularly brings a great quantity of water from the hot, rainy southern mountain region.

At the headwaters of the Nile the rains come in our summer months, and the flood of water reaches the lower Nile Valley in Egypt in the early autumn. The water brings with it much fine soil and drops it on the land wherever it is flooded. In this way the Nile each year makes the soil of its lower valley richer. It also supplies the water used to irrigate the growing crops.

Thus for thousands of years the valley and delta of the Nile have furnished food for millions of people. But floods are wasteful of water, because much of it runs away



Hinkley

FIG. 316. Camels in the streets of Cairo, Egypt.

The driver of these camels walks between them and guides them by means of the rope.

Why is the guide rope attached to the head of the camel?

Do you think there might be danger of overloading the camels?



Hinkhouse

FIG. 317. A view of the city of Cairo, Egypt. In the center at the back of the picture is the fortress of the city, and rising from this is a famous mosque built of alabaster slabs taken from the pyramids. The tall, slender towers are called minarets. What people did the ancient Egyptians have to guard against?

before it can be used. So a great dam has been built at *Aswan* to hold back some of the water in flood time for use later in the dry season. Three smaller bars, or *barrages*, have also been built at points farther up the Nile. As a result of this reservoir system the land can be cultivated more effectively, and in some sections two or three crops a year are grown.

The chief crop is cotton. Egyptian cotton has a long, silky fiber and is especially prized for certain kinds of spinning. A similar cotton with very long fiber is raised in our country in irrigated sections of our southwestern states.

Next in importance to the cotton crop is the wheat crop. Sugar cane, beans, fruits, and vegetables are also produced in great abundance. The surplus crops are exchanged for manufactured goods, such as textiles, machinery, and food products, and also for tobacco, which no one is allowed to raise. The tobacco is made into cigarettes and then exported.

Egypt is well supplied with railroads, and products can be easily carried to the ports both by rail and by water.



Publishers Photo Service

FIG. 318. A great mosque of Cairo. A mosque is a Mohammedan church. Notice the minarets. Why would you like to visit Cairo?

Cairo, the capital of Egypt, is on the Nile where the delta begins. It is the largest city in Africa and has a little larger population than Boston. From this famous old city visitors and tourists through Egypt start out on their trips (Figs. 316, 317, 318). *Alexandria* is only about half as large as Cairo. It is the port of Egypt because it is at the mouth of the Nile and near the entrance to the Suez Canal. Port Said is at the northern end of the Suez Canal.



319. A coaling station at Durban. Durban is a port on the southeast coast of Africa. Into what ocean does its harbor open? What is meant by a coaling station? Where in our country would you find a scene similar to this?

WHY EUROPEANS HAVE SETTLED SOUTH AFRICA

SOME THINGS TO LEARN

Three reasons why Europeans have settled in South Africa.

That South Africa furnishes to the world.

Agricultural region. South Africa, like middle Chile, has a mild, moist winter in June, July, and August and a dry, hot summer during our winter months. The seasons, you see, are just the opposite of those in our country because this region lies south of the equator.

The climate as a whole is favorable for European people, and the region now has many English and Dutch settlers. The countries that occupy most of the region form parts of the British Empire.

Most of the region is excellent farming land and good crops of oats, wheat, barley, and many kinds of fruit are grown. Farther from the coast, where it is too dry for agriculture, grazing is carried on profitably. Sheep, and goats are raised, and wool, hides, and skins are exported. The

raising of ostriches for their plumes has long been a flourishing industry in South Africa.

Railroads are being built rapidly, and the many settlements are now connected with each other and with the ports. As coal is plentiful, manufacturing is increasing. South Africa is fast becoming an important part of the British Empire.

In many parts of South Africa there are rich deposits of coal, copper, and tin, which add much to the wealth of the country.

Trade and wealth in gold and diamonds. Most of the trade of South Africa is with Great Britain. Among the leading imports from the United States are oils, automobiles, machinery, and agricultural implements. In exchange the most valuable things we receive are hides and skins, wool and hair, ores, ostrich feathers, and rough diamonds. South Africa produces more gold than all of North America, and practically all the diamonds in the world. The gold and diamond mines are owned and supervised by white men, usually Europeans, but the men who work in the mines are native blacks.



FIG. 320. A view of Cape Town, South Africa.

The city of Cape Town lies at the southern tip of the continent.

The town is built on the shore of Table Bay.

Mountains rise on the three sides back of the city.

This view shows Devils Peak, the great mountain to the west.

Many English people have homes in Cape Town. Can you account for this?

Do you see any buildings in the picture that have Dutch roofs?

How do you account for this style of building?

Publishers Photo Service

Johannesburg is the chief center of gold mining, and *Kimberley* leads in the production of diamonds. *Durban* is a port and coaling station of the southeast coast (Fig. 319). *Cape Town* is the chief port of the country (Fig. 320). *Pretoria* is the seat of government of the Union of South Africa and Cape Town is the seat of the legislature.

SOME RELATED PROBLEMS

1. Try to find out what two men have been prominent in the exploration of Africa.
2. Why is the Strait of Gibraltar so important to Great Britain?
3. Why is a flood in the Mississippi Valley harmful, while a flood in the Nile Valley is helpful to the people who live there?
4. At what season of the year is it Christmas in South Africa?
5. Why are diamonds considered so valuable?
6. Why did Europeans found colonies in America before they founded those in South Africa?

7. In what ways are most of the rivers of South America better suited to exploration than those of Africa?
8. What weapons and tools made by white men can be used to advantage by the blacks of Africa?
9. Why is the camel called the "ship of the desert"? How is the camel especially well fitted for desert travel?
10. What might cause a famine in Egypt?

SOME THINGS TO DO

1. Make a list of things which come to us from Africa. Where in Africa is each found?
2. Write a story of a caravan trip from Algiers on the northern coast to the Oasis of Fezzan in the Sahara, giving your traveling experiences.
3. Make a collection of pictures showing the antiquities of Egypt.
4. Make a poster on which are pasted in three groups the pictures of (1) the wild animals, (2) the birds, and (3) the native people of Africa.



FIG. 321. A Relief Map of Eurasia



FIG. 322. A Physical Map of Eurasia



ASIA—THE LARGEST CONTINENT

152. WHAT THE RELIEF AND THE PHYSICAL MAPS SHOW

Problems:

- How would you travel and by what routes might you go in making trips from both the east and the west coasts of the United States to China? (Fig. 97.)
 - Trace water routes from New York City to Hongkong by way of the Suez Canal and Singapore.
 - Trace routes from San Francisco or Seattle to Hongkong by way of Tokyo or Shanghai (Fig. 97).
- Why is a voyage from the Isthmus of Suez to the Malay Peninsula always hot?
 - Compare the distance of the mouth of the Nile from the Equator with that of the mouth of the Mississippi.
 - What is true of the climate along both sides of the Red Sea?
 - How far is the Malay Peninsula from the Equator?
 - What is the distance by water from the Isthmus of Suez to the Malay Peninsula?
 - How long would it take you to make this hot trip, traveling five hundred miles per day?
- Why do some parts of Asia have more people than others? (Figs. 321, 322, 323.)
 - Where are two sections with many people?
 - What peninsula has few people living in it?
 - Why is the central portion of Asia so thinly populated?
 - Why are there few people along the Arctic coast?
 - Why are there so few people in the Peninsula of Arabia?
 - Show that the areas with plenty of rainfall have the most people (Fig. 324).
- Asia is much larger than North America. Let us prove this by using the maps (Figs. 322, 119).
 - Find how far it is from the west coast of Anatolia in western Asia to the east coast of the island of Honshu, Japan. Compare this distance with the distance from New York City to San Francisco.
 - Find how far it is from the southern tip of the Malay Peninsula straight north to the Arctic coast. Compare this distance with the distance from Mexico City to the Arctic coast (Figs. 322, 119).
 - Consult the Appendix and see how Asia compares in size with North America and with the other continents.
 - How large is Eurasia?
- Why are some of the rivers of Asia so much more useful than others?
 - Name three large rivers that



FIG. 323. A population map of Eurasia. In what two countries are the areas which have the greatest population?



FIG. 324. A rainfall map of Eurasia. Locate on the physical map the areas of heaviest rainfall.

flow northward; three that flow eastward; four flowing to the south. (e) Which rivers flow through cold regions? (f) Which flow into bodies of water that are frozen during much of the year? (g) Which rivers probably never freeze?

Questions:

1. What large seas and oceans touch Asia?
2. Which of these seas have you heard about before?
3. How is Asia joined to Africa?
4. What strait separates Asia from North America?
5. What continent joins Asia at the west and with it forms Eurasia?
6. What seas lie between Asia and Europe?
7. Name three large lakes lying wholly in Asia.

Essential names and places:

Study the maps, Figs. 321 and 322, and be able to locate the following on an outline map: the Himalayas, Mount Everest, and Fujiyama; Caspian, Black, Mediterranean, Red, Arabian, South China, Yellow, and Japan seas; Persian Gulf and

Bay of Bengal; Jordan, Tigris, Euphrates, Indus, Ganges, Brahmaputra rivers, Hwang Ho and Yangtse Kiang; the Pamirs, plateaus of Arabia, Tibet, Iran, Mongolia.

153. WHEREIN ASIA SURPASSES OTHER CONTINENTS

SOME THINGS TO LEARN

1. Several ways in which Asia surpasses other continents.

Its size and population. Asia is the largest of the seven continents. It is more than four times as large as Europe. Although many sections are very thinly populated, yet Asia contains more people than all the rest of the world together.

The coldest climate in the world. The northern part of Asia is very cold in winter. The coldest place in the world is in north-central Siberia, where the temperature sometimes drops to 90 degrees below zero.

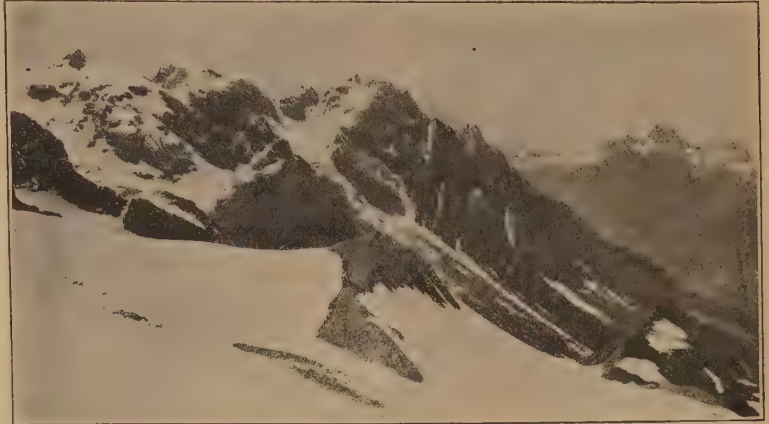
The highest and the lowest land. The highest mountains in the world are the

FIG. 325. Some snow-capped peaks in the western Himalayas.

This picture was taken in Kashmir, which is known as the "Switzerland of India."

Water from the glacier in the foreground helps to water the plains far below.

In summer primroses grow on the bare patches at the edge of the snow.



Hinkhouse

Himalayas in southern Asia (Fig. 325). Many peaks here are more than five miles high. One, *Mount Everest*, is the highest peak in the world.

We have learned that some of the land in the Netherlands is below sea level. But the lowest-lying land in the world is in southwestern Asia in the valley of the *Jordan River* (Fig. 326) and the *Dead Sea*. The *Dead Sea*, 1,300 feet below sea level, is a salt sea with no outlet to the ocean. In some ways this area is like our Great Basin region.

The highest plateau and the greatest plain.

The *Plateau of Tibet* is the greatest area of high land in the world. This plateau is more than ten times as large as Nebraska and on an average about as high as Pikes Peak.

The world's most extensive plain is the one that begins in the low countries of Europe and occupies all of northern Eurasia from the Atlantic to the Pacific. The Asiatic section of this immense plain is as large as the whole of the United States.

154. "THE ROOF OF THE WORLD"

SOME THINGS TO LEARN

1. What is meant by "The Roof of the World."
2. How the slopes of Asia may be compared to those of the roof of a house.

How the continent may be divided. A little west of the center of Asia is a high plateau called the *Pamirs*, no farther from



Photograph by Elmendorf, from E. Galloway

FIG. 326. A ford in the *Jordan River*. The *Jordan* is a river well known to every Bible student. Why do the people live in this valley and not on the hills? How do you know that this is a shallow river?

the Equator than Kansas, but so high and so cold the whole year round that few people can live there. Because of its height and because rivers flow away from its higher ridges in every direction, this region is often called "The Roof of the World."

The mountain systems which extend away from the *Pamirs* in every direction divide Asia into four parts. One group of mountains extends westward from the *Pamirs* to the *Caspian Sea*, one group southwest to the *Arabian Sea*, one group southeast to the *South China Sea*, and one northeast to the *Sea of Okhotsk*. Thus, Asia is divided into four parts, namely, southwestern Asia, southern Asia, eastern Asia, and northern Asia.



155. WHAT THE POLITICAL MAP OF EURASIA SHOWS

Problems:

1. In what part of North America would you expect to find climate and products similar to those of India? (a) Find a place in North America just as far from the Equator as is the southern point of India (Fig. 97). What kind of climate and products are found there? (b) What large city in the United States is about as far from the Equator as is Peking, China? (Fig. 97.) (c) What large city in India is the same distance from the Equator as is Havana, Cuba? (Fig. 97.) (d) Name several crops that you would expect to grow successfully in eastern and in southeastern Asia.
2. Why should we expect the people of India to buy little food from other nations? (a) Why should it be easy for the people of India to produce their own food and clothing materials? (b) Why does not India buy food from China and Indo-China? (c) Why would trade between India and countries to the north be difficult? (d) What barriers cut off India from overland trade to the west? (e) What islands to the southeast are much like India in climate and products?
3. Compare the political maps of Eurasia and North America (Figs. 327, 119). Find cities in the latter that are about the same distance from the Equator as are the following: Naples, Bukhara, Shanghai, Bombay, Vladivostok, Tokyo, Irkutsk, Baku, and Colombo.
4. How do the great mountain systems of Asia keep the nations of the south and east from trading with people of the interior? (a) What highlands separate China from India? (b) What mountains extending southward from the Pamirs separate India from the people to the west? (c) What mountains separate India and Persia from the people living in regions to the north? (d) Name the rivers and mountain ranges that help to form the boundary between China and Siberia? Name some mountain ranges within the boundaries of China. (e) Of what Union is Siberia now a part?
5. Locate the capital of each country in Asia and the following cities: Smyrna, Aleppo, Tashkent, Urga, Vladivostok, Irkutsk, Yarkand, Calcutta, Bombay, Madras, Benares, Colombo, Rangoon, Hankow, Hongkong, Shanghai, Chungking, Canton, Osaka, Yokohama.



THE PLATEAU COUNTRIES OF SOUTHWESTERN ASIA

156. THE OLDEST KNOWN COUNTRY

SOME THINGS TO LEARN

1. Three interesting facts about the surface of southwestern Asia.
2. Why southwestern Asia is a historic region.
3. How the people of long ago thrived in this region.

Why southwestern Asia is interesting to

us. In southwestern Asia there is a large valley drained by the *Tigris* and *Euphrates* rivers. This valley, known for centuries as *Mesopotamia*, forms the country of *Irak* and is one of the most interesting regions of the world. Here, thousands of years ago there were many large, wealthy cities. The people and the nations of *Mesopotamia* were rich and very powerful. In this warm, fertile country bountiful crops of grains and other foods were raised by irrigation. *Babylon* was famed for its wonderful gardens.

Then the valley was densely populated, and the cities of *Babylon* and *Nineveh* were the capitals of great nations. Ages ago both cities were completely destroyed, and most of what we know about them has been learned from the ruins found beneath the sands by which they were covered long ago.

This valley lies in a country that is very dry and most of it a high plateau, which is like parts of our western states. Here some grain is grown, but grazing is the chief occupation, as it always has been. Today the people live much as they did long ago, in Bible times.

157. ANATOLIA (ASIA MINOR): SUNRISE LAND

SOME THINGS TO LEARN

1. Why the Greeks call Asia Minor, Anatolia.
2. How the Turks lost their large possessions in Europe.
3. What Anatolia has to exchange in trade with other nations.

The home of the Turks. *Anatolia* is a Greek word meaning "Sunrise Land." From the maps (Figs. 322, 327) you can see that Anatolia lies to the east of Greece; hence the Greeks always see the sun rise over Anatolia.

This region is now the home of the Turks, and is usually called *Turkey in Asia*. Before the World War, Turkey occupied a large area in Europe. In fact, at one time the Turkish Empire occupied nearly all of the Balkan Peninsula. Now the Turks have lost almost all their territory in Europe.

What Anatolia produces. In early times Anatolia was a prosperous agricultural region and carried on trade with other nations along the shores of the Mediterranean Sea. Because the Turks, who later conquered this region, are not tillers of the soil, farming here has lost much of its early importance. Today, however, cotton, cereals, raisin grapes, figs, and many other kinds of fruit are raised, and some of these products are exported. But the officers of the government are not interested in helping the people learn modern methods of farming, and hence agriculture is not so successful as it might be.

158. ARABIA: THE SACRED LAND OF THE MOHAMMEDANS

SOME THINGS TO LEARN

1. How the people of Arabia make a living.
2. Why Arabia is the sacred land of the Mohammedans.
3. Why pilgrimages are made to Mecca.

How the people make a living. The whole of the peninsula of *Arabia*, except close to the sea which bounds it on three sides, is a high, dry plateau country. In this narrow fringe along the seacoast, farming is carried on largely by irrigation. Coffee, figs, and dates are raised in abundance. The date is one of the chief foods of desert peoples. It is grown in nearly every oasis where water may be had for irrigation. In the drier sections, grazing is the only industry, and

here some of the finest horses in the world, as well as camels and donkeys, are raised (Fig. 328). But much of the interior is an unoccupied desert about which we know little, for few white people have visited it.

Why pilgrimages are made to Mecca.

Mecca is a city near the southwest coast of Arabia in which Mohammed, the founder of the Mohammedan religion, was born. Because Mecca is the Holy City to every Mohammedan, thousands make long and often difficult journeys to it each year.

159. PALESTINE AND SYRIA: THE HOLY LAND OF CHRISTIANS AND JEWS

SOME THINGS TO LEARN

1. Why we call Palestine the Holy Land.
2. How Palestine today compares with ancient Palestine.

Why Palestine was once so important.

Before the New World was known and the oceans had become the great highways of trade, all the great nations of the world bordered the Mediterranean. *Palestine* and *Syria* at the eastern end of the Mediterranean Sea held the most favorable positions for both overland and coastwise trade between the countries of southern Europe and the countries of southern Asia.

Why sacred to Christians and Jews.

The Bible is largely the history of the Jewish people at the time they were building



Thompson

FIG. 328. Some Arab sheikhs. A sheik is a ruler of a tribe of people in Arabia. What kind of a life do the people lead? Why are they good horsemen?

a great nation on the eastern shore of the Mediterranean. From this region the Jewish people have spread to all parts of the world. This is still their homeland, the land to which they are tied by their religion.

Christians call this region the Holy Land because it was here Jesus lived and taught. It was here, too, that the first Christian churches were organized, and from here the first Christian missionaries went out to preach to the other nations of the world.

The people today. One passing through Palestine or Syria today would hardly think that this was once the home of a powerful and rich people, for agriculture has declined here, just as it has in Mesopotamia. Grazing, as in all dry countries, is now the chief occupation (Fig. 329). The people still live much as they did in Bible times.



Hinkhouse

FIG. 329. A scene in Palestine.

These shepherds are tending their flocks in just the same way that shepherds tended their flocks in Bible times.

Notice the dress of the shepherds. Why is the head covered in this way?

In what other countries are such clothes as these worn?

160. ARMENIA; AFGHANISTAN; PERSIA**SOME THINGS TO LEARN**

1. Why the Armenians are unfortunate.
2. In what ways Persia is a land of contrasts.
3. Why Afghanistan is a buffer country.
4. Why the caravan routes of southwestern Asia are not so important as formerly.

Armenia: an unfortunate land. Armenia, Persia, and Afghanistan occupy a high plateau region rimmed about by mountains. The western part of this area is *Armenia*. There is enough rainfall in some sections to raise some corn, cotton, and grapes. The weather is very cold in winter and very hot in summer.

In early days Armenia was an important nation, but with the coming of the Turks, who gradually gained control of the whole region, Armenia as a nation ceased to exist. The people, who are Christians, have been cruelly mistreated by the Turks.

The history of Armenia of late years has been one of sadness and cruelty. With food and other gifts, Americans have done much to help these unfortunate people.

Persia: a land of contrasts. *Persia* extends from the Caspian Sea south and east to the Persian Gulf. The interior is a vast sandy desert with mountains on the north and south. The lowlands along the Caspian Sea and the near-by mountain slopes are covered with forests. At the southern edge of the desert are some rich oases which produce wheat, many kinds of fruit, and wonderful roses. The lowland lying along the Persian Gulf is dry and barren, but the mountain slopes contain some rich valleys which produce warm-climate crops of fruit and grain. Most of the people of Persia are engaged in caring for flocks of sheep and goats. This part of Asia is especially noted for the beautiful Persian rugs woven by hand in the homes of the people.

Afghanistan: a buffer country. The country of *Afghanistan* is the wildest, least productive

part of southwestern Asia. It has long been called a "buffer country" because it separated the British possessions on the southeast from the Russian possessions on the north.

In ancient times the most important land routes between Europe and India were through this wild, rough country. For many centuries great caravans of camels and men carried the rich products of the East Indies to the people of southern Europe. But today these land trails are unimportant, since the ocean is now the great trade route for world commerce.

161. THE PEOPLE AND CITIES OF SOUTHWESTERN ASIA**SOME THINGS TO LEARN**

1. How the people of this region depend on grazing animals for a living.
2. One fact of importance about Smyrna.
3. Why Jerusalem is an interesting city.
4. The names of five other cities of southwestern Asia, and a fact about each.

The people. Most of the people of this part of Asia have dark complexions although they belong to the white race. They know little of the best methods of farming and of carrying on other industries which have been so well developed in the New World. They have learned through long ages how to make a living in a dry country. They depend much on their flocks and herds, that give them milk and meat for food, wool for clothing and rugs, and many other necessities of life.

Leading cities. Until recently *Smyrna* was the largest and most important city of Anatolia. During the recent struggle between the Greeks and the Turks for the possession of western Anatolia, *Smyrna* was almost completely destroyed.

Jerusalem, in Palestine, is the Holy City of the Christians and Jews (Fig. 330). It lies on the highland between the Dead Sea and the Mediterranean. *Bethlehem* is well known to Christians as the birthplace of Jesus.



Thompson

FIG. 330. A street in Jerusalem. This is a street in the city sacred to both Christians and Jews. Of what material do you think the houses are made?

Damascus, in Syria, is the most ancient city in this part of the world. *Beirut* is the chief port of the country. *Aleppo*, in northern Syria, was for centuries the center of the great caravan trade between Bagdad and Damascus. *Bagdad*, on the Tigris, is near the site of ancient Babylon and is the leading city in Irak (Mesopotamia). *Tehran*, the capital and chief city of Persia, is about as large as St. Paul. *Angora* is now the capital of Turkey. *Baku*, on the west shore of the Caspian Sea, is the center of a great petroleum industry.

THE PLAIN AND UPLANDS OF NORTHERN ASIA

162. SIBERIA: THE LAND OF THE COLDEST WINTERS

SOME THINGS TO LEARN

1. What is included in the plains and uplands of Asia.

2. What makes Siberia rich in possibilities.
3. How Siberia is like Canada.
4. Why the Trans-Siberian Railway was built.
5. What makes Turkestan a land of nomads.
6. Something about past and present importance of Turkestan.

Siberia: a land rich in possibilities.

Siberia, once a part of the great Russian Empire, was long thought to be so cold and desolate that men could not make a living there. This was largely because the winters were known to be very cold. But the summers are warm, and this vast region, larger than Canada and Alaska together, has great areas of soil which can be made to produce good crops. The forests and minerals have hardly been touched as yet. The country is rich and may some day support a large population.

How Siberia compares with Canada.

In the northern parts of Canada and Siberia are wide frozen deserts called *tundras*, where vegetation grows only during the short summer. These regions support grazing animals such as the reindeer and musk ox. South of the tundras stretch great forests of both evergreen and deciduous trees. Still farther south in each country lie large areas of rich, fertile farm land. In Canada these agricultural areas are being rapidly settled, but in Siberia they are still largely awaiting the settler's plow.

At the present time grazing, hunting, and fishing are the chief occupations, although the raising of cereals is growing in importance.

Why the Trans-Siberian Railway was built. Until a few years before the World War, Russia had no ocean port with a harbor which could be used throughout the year. For this reason a railroad was built from St. Petersburg in western Russia to Vladivostok on the Pacific. This railroad not only gave Russia an outlet all the year round to the ocean, but, what was of greater importance, it opened up the vast Siberian



Ewing Galloway

FIG. 331. A caravan in an oasis in Turkestan. It is in such places as this that the caravans halt for the men and animals to rest. It is here, too, that provisions for the next part of their trip over the desert are secured. Often goods are unloaded here and a new load taken on. What products might be carried from such an oasis?

plains to settlement. The best-developed part of Siberia lies along this railway.

There are few large cities in Siberia because it is a new country and because the Russian government, when it had control of this area, did not encourage settlement. The chief towns are on the great Trans-Siberian Railway. *Vladivostok*, the eastern terminus of this railroad, has about 100,000 people. *Irkutsk*, on the shore of Lake Baikal, is the leading interior city. *Omsk* and *Orenburg* are both centers for trade by rail, river, and caravan.

Russian Turkestan: a land of nomads.

Turkestan is a dry country lying east of the Caspian. It is occupied mainly by wandering people, or nomads, who make their living from their flocks and herds. Before the World War the whole of this region belonged to the Russian Empire. Since then, it has been broken up into several small republics which are now included in the Soviet Union.

Along some of the streams flowing from the Pamirs, farming is carried on by irrigation. The leading crop has been cotton, most of which was shipped to cotton mills in Russia.

There are several cities in this region which grew up along the line of the old caravan route (Fig. 331). These are now the leading trade and railway towns. *Tashkent* and *Bukhara* are the most important.

Why Turkestan is of special interest. For hundreds of years one of the main caravan routes from Europe to India passed through this region. Now much of the land trade is carried part of the way by railroads, but the land route is not so important as it once was because the opening of the Suez Canal made it is so much easier and cheaper to carry goods by water.

SOME RELATED PROBLEMS

1. How would you travel and by what route would you go from your home to Mecca?
2. At the rate of 400 miles per day, how long would it take to go by rail from Leningrad to Vladivostok?
3. How does the Trans-Siberian Railway compare in length with the proposed Cape-to-Cairo Railroad?
4. Why are some parts of Siberia better places in which to live than others?
5. Why is so much of southwestern Asia so thinly populated?
6. Why has Siberia but little water commerce?
7. What part of our country is most like Anatolia?
8. Why was southwestern Asia more important formerly than it is today?

SOME THINGS TO DO

1. Find five places in Syria and Palestine that are mentioned in the Bible.
2. Write a short story of a caravan trip from Tashkent to Moscow.
3. Tell what bodies of water and what countries you would pass through on a trip from New York City to Bagdad.

THE COUNTRIES OF SOUTHERN ASIA

163. THE LAND OF THE MONSOONS

SOME THINGS TO LEARN

1. When rain comes to southern Asia.
2. Why there are large rivers in southern Asia.
3. Why this is called the land of the monsoons.

When rain comes to the monsoon countries. Southern Asia lies in the Hot Belt and is

FIG. 332. Scene along the coast of Ceylon.

Notice how the palm trees all bend one way.

Try to find other pictures in this book that show palm trees.

Why cannot the ships come up closer to the land?

How do people and goods reach the shore?

How can you know that this picture was taken on a clear bright day with very little wind?



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separated from the cold northern regions by the highest mountains in the world. Lying between the mountains and the sea, much as Italy does, these vast lands are hot and thickly populated. In this region during our winter months winds blow out from the land over the sea, and there is little rainfall. This is, therefore, the dry season when the weather is very enjoyable. In summer the winds blow in from the warm ocean and bring enormous quantities of rain to a large part of this area. At this season, except in the cooler, higher regions, the weather is very unpleasant for Europeans. But this is the season when vegetation grows and when food is raised for the millions who live here. The rainy season is from June to October. Winds which change their direction with the seasons, as they do here, are called *monsoon winds*, and these regions may therefore be well called the monsoon countries.

What southern Asia includes. Southern Asia includes two large peninsulas and the island of *Ceylon* (Fig. 332). The larger peninsula we know as India and the other as *Indo-China*. These regions have several large rivers which are highways of travel, and their valleys are rich agricultural regions. The largest of these rivers are the *Indus*,

Ganges, *Brahmaputra*, and *Mekong*. All of them rise in the mountains, where they are fed by the melting snows as well as by the heavy rains of the summer months.

164. INDIA: THE LARGEST COUNTRY IN THE BRITISH EMPIRE

SOME THINGS TO LEARN

1. Why agriculture is successful in India.
2. Why manufacturing is not well developed.
3. Why crop failures in India were formerly so serious.
4. How danger from famines is being overcome in India.

Why crop raising is important. India is a part of the British Empire, with an area more than one-half as large as that of the United States. It has three times as many people, or about one-fifth of all the people in the world.

India has such good soil, especially in the river valleys, and the summer monsoons bring such a plentiful supply of rain that crops are easily grown, except in the drier western portion. This is fortunate, for in a region containing so many people, great quantities of food are needed. The chief food crops of India are rice grown in the lowlands, wheat raised on the central plateau,



Photograph by Elmendorf, from E. Galloway

FIG. 333. Sesame mills in southern India. In these mills are ground the seed of the sesame plant. From the seed is secured an oil which is much prized by the people. What is the chief work animal in India? What do you see that tells you something about what kind of climate this country has?

millet, which thrives in the drier regions, and sesame, which furnishes a valuable oil (Fig. 333). Most of the rice and the millet are used at home. People in hot countries usually eat more grain and fruit and less meat than people in cold countries. India is also one of the world's great tea-producing countries. Ceylon, an island off the southern coast, is another world's source for tea.

As in many other tropical countries, manufactures have developed slowly in India. Wheat, cotton, jute, and other products of the soil are therefore exported in exchange for manufactured goods. India, however, manufactures burlap out of jute and some fine-spun cotton goods, in the weaving of which great skill is necessary.

Why crop failures have been so serious. Sometimes the summer monsoons have failed to bring enough rain to produce crops in certain of the grain-growing sections of India. Formerly such droughts were serious, for they caused millions of the people to face starvation. There were many reasons for this.

The people of India, because of their religious beliefs and because of the climate, eat little, if any, meat. They therefore depend on grains, and when the crops fail they must get food from some region where there is plenty. Before the building of railroads there was little trade in food, for the people were so poor that they had little money with which to buy food. Now the crops are more certain because irrigation has been introduced. Hence the chances of famine are very small.

165. INDO-CHINA: FARTHER INDIA

SOME THINGS TO LEARN

1. Why the peninsula of Indo-China is important in rice culture.
2. Why elephants and buffaloes are used as draft animals in southern Asia.
3. Why so much of southern Asia is owned by European countries.

The land of rice and rubber. The rich, warm valleys and deltas of the rivers of Indo-China make it one of the leading

rice-growing areas of the world. Usually three crops a year are grown here. Everybody eats rice, but as more is grown than the people need for their own use, much is shipped to other lands in exchange for cotton goods and other necessities.

Within the last few years rubber plantations have become very important in this part of Asia, and now about three-fourths of the world's crop is produced here (Fig. 335).

Some useful work animals. In this part of Asia elephants are taught to help with heavy work (Fig. 334). They pull, lift, and carry just as horses, trucks, and tractors do in our country. Water buffaloes, or carabaos (Fig. 344), also help much with the farm work. They are easily trained, and in certain regions all the cultivating of the land is done by them.

Why European countries possess much of Indo-China. All of the eastern coast of Indo-China is owned by the French, while the English control the western coast. These tropical countries not only furnish food and raw materials needed by the home nations in Europe but they also give a market for



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FIG. 334. An elephant at work in Indo-China. The animal is carrying teakwood with his trunk. Why does the man at the right carry an umbrella?

manufactures from the mother countries. Thus tropical and temperate lands help each other, each supplying things the other lacks. The central part of the peninsula is occupied by the independent country of *Siam*.

166. THE EAST INDIES: THE SPICE ISLANDS

SOME THINGS TO LEARN

1. Reasons for the importance of the Spice Islands in both ancient and modern times.
2. The names and locations of the two largest groups of islands in the Malay Archipelago.



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FIG. 335. On a rubber plantation in the Malay Peninsula.

The smoked rubber is drying on a line in front of a native hut.

The hut is in a grove of palm trees. No rubber trees are shown in this scene.

How does this smoked rubber differ from that in South America?

In Asia the rubber trees are all grown on a plantation, while in South America (Fig. 241) the rubber trees grow wild.

Does this look like a comfortable place in which to live?



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FIG. 336. Gardeners going to market in Java. Java, an island of the Dutch East Indies, is not so large as Iowa but has about fifteen times as many people. The people live almost wholly by agriculture.



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FIG. 337. Elephants ready for a dress parade. This picture was taken in Delhi, the capital of India. The noblemen and royalty of India enjoy such parades, in which the elephants wear gorgeous trappings.

The reason for their importance. For many hundreds of years the islands of southern Asia have been known as the "Spice Islands." This group of islands forms the *Malay Archipelago*. Before Vasco da Gama sailed around Africa to these islands, and before Columbus tried to reach them by sailing west from Europe, much of the spices and other riches from this region were carried overland to Europe by caravan.

When the Turks gained control of western Asia and eastern Europe, the overland trade in spices largely ceased. But the people of Europe prized the riches of the East Indies so highly that at once they sought a new way of reaching this rich part of the world, and thus the ocean routes were discovered.

The islands of the Malay Archipelago may be divided into two groups. The group farthest east is the Philippines, which belong to the United States (Fig. 210). The larger group to the south is called the *Dutch East Indies*, and belongs chiefly to the Netherlands. *Java* (Fig. 336) and *Sumatra* are two of the best-known islands of this group. In addition to the spices for which they are still best known, these islands produce great quantities of tea, coffee, coconuts, cacao, rubber, tobacco, and valuable woods.

167. THE PEOPLE AND THEIR CITIES

SOME THINGS TO LEARN

1. How the population compares with that of Europe and the United States.
2. How the resources of southern Asia have been developed.
3. The location and two interesting facts about each of ten cities in southern Asia.

Races and people. In southern Asia there are about 400,000,000 people, almost as many as in all Europe. This great population is made up of many races, speaking more than one hundred different languages.

Hundreds of years ago, some of the people of India built beautiful temples and wrote poems which today are admired the world over. They also founded one of the great religions of the world, and in many other ways showed that they were a highly civilized people. But many parts of the East Indies were not so well developed. Even today there are sections that are still occupied by savage people who have no industries of importance to the world, and who therefore take no part in world trade.

The development of the resources of southern Asia has been largely the work of Europeans. They have built irrigation systems, harbors, and docks; they have brought in modern machinery and inventions, have established law and order, and have opened up trade.

The leading cities of southern Asia. Several of the cities in southern Asia have more than half a million people each. *Calcutta*, near the mouth of the Ganges, is, with its suburbs, the largest city in India (Fig. 340). It contains more people than Detroit. For many years Calcutta was the capital of India. A few years ago the British moved the capital to *Delhi*, because of its more healthful location (Fig. 337).

Bombay, on the west coast, the second city of India, contains about as many people as Detroit. Because Bombay has an excellent harbor and lies much nearer Europe, it is more important commercially than Calcutta.

Madras is the leading seaport on the east coast of India, and *Hyderabad* is the largest inland city on the peninsula. Each of these cities has about the same population as San Francisco. The sacred city of the Hindus, as the natives of India are called, is *Benares*, the oldest city of India.

Colombo is the capital of Ceylon, an island off the southern coast of India and a part



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FIG. 338. A giant banyan tree in Ceylon. This looks like a small grove of trees standing close together, but really it is only one tree. Notice how the many trunks are all attached to the same tree. How do white men travel in Ceylon?

of the British Empire (Fig. 338). The city has a magnificent harbor, protected from the ocean waves by a great breakwater. Colombo is the most central port of the Indian Ocean and is therefore of great commercial importance. Much rubber and tea, both products of Ceylon, are shipped from Colombo.

Bangkok, the capital of Siam, is about as large as Pittsburgh and is the largest city in the eastern peninsula of Indo-China (Fig. 339). *Singapore*, because of its position at the most southern point on the continent of Asia, is a leading trade center.

FIG. 339. A canal scene in Bangkok.

Rice boats, or sampans, from far up in the country, come down to the mills.

The sampans are pushed along the waterways by means of long bamboo poles.

Besides the canals, Bangkok has many fine hard-surfaced roads for travel.



Hinkhouse

It is on the great water route by way of the Suez Canal from Europe to the countries of eastern Asia. All vessels following this route must pass Singapore. The vessels of more than fifty steamship companies call at this busy port.

Batavia, on the densely populated island of Java, is, after Singapore, the leading city of this part of the world.



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FIG. 340. A temple in Calcutta. This is only one of many such buildings in Calcutta. India is well known for its thousands of temples. Why do the people erect such buildings?



Photograph by Elmendorf, from E. Galloway

FIG. 341. The Taj Mahal at Agra. This is often called the most beautiful building in the world. It is a tomb. What suggests that this is a hot, sunny country?

168. SOME FEATURES OF SPECIAL INTEREST

SOME THINGS TO LEARN

1. What is meant by the caste system in India.
2. Why wild animals are protected in India.
3. Why so many temples have been built in southern Asia.
4. How the climate and the vegetation of the Himalayas change as you climb the mountain slopes.

The caste system in India. In our country anyone may advance, through hard work and study, until he becomes a leader in the profession or occupation he follows. In India this is not the case, for each native belongs to a class or caste and must stay in his caste. If the father of a Hindu boy is a shoemaker the boy also must become a shoemaker. It is impossible for him to become a merchant, a doctor, or a teacher, each of which represents a different caste. For this reason all people born in the lower castes are unfortunate, for, however hard they try, they cannot improve their condition. No one can understand the ways of the Hindus unless he knows something about the caste system.

Dangerous wild animals. Natives of India believe that it is wrong for them to kill wild animals even to protect themselves from danger. As a result, hundreds of natives every year lose their lives through the attacks of tigers, poisonous snakes, and other vicious animals. They therefore hail with joy any visitor who kills one of these animals.

The wonderful temples of southern Asia. The religious zeal and the fine art of the Indian people are well shown in the wonderful temples they have built (Fig. 340). Many thousands of these temples may be seen along the Ganges, the sacred river of the Hindus. In Benares, a city about the size of Omaha, there are more than two thousand of these Hindu shrines or holy places.

Perhaps the finest building in the world is the *Taj Mahal* (Fig. 341), a tomb at Agra

built by a Mohammedan ruler in honor of his wife. Twenty-two thousand men worked more than twenty years to complete it.

The majestic Himalayas. The traveler in northern India sees still farther to the northward the Himalayas, towering to the sky like a giant wall (Figs. 325, 342). In the valleys at the foot of the mountains the weather during the summer is intensely hot; rain falls in torrents, and vegetation forms a tangled jungle alive with venomous snakes, dangerous wild animals, chattering monkeys, and brilliantly colored birds. These valleys, like the hot regions along the Amazon and the Congo, are not habitable by white people.

As we ascend the southern slope of the Himalayas, the hot jungle gradually gives way to open forests with a cooler climate and a different type of animal life. This is the section which Europeans seek during the hot summer season (Fig. 343).

Farther up the mountains, the forest trees change to evergreens similar to those of northern Europe and America. These in turn give way to high mountain pastures above which rise the great snow-capped peaks of the Himalayas. Many of the peaks are higher than Mount Aconcagua in the Andes, the highest mountain in the Western Hemisphere. Among these giant peaks, towering above dozens of others, is Mount Everest, the highest mountain in the world. No one has yet climbed to the summit of Mount Everest, although many have tried and nearly succeeded.

SOME RELATED PROBLEMS

1. How do the people of India and Great Britain help each other?
2. How does India differ from any of the other countries of the British Empire?
3. Why did all the early explorers want to find a route to India?
4. How has agriculture been improved in India through the aid of the British?
5. Tell of Magellan's visit to the Philippines.



Photograph by Elmendorf, from E. Galloway

FIG. 342. A walled city in northern India. The old city wall may be seen extending over the hill. Why were walls needed in former times? Why would they be of little value today?



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FIG. 343. A view in the valley of Kashmir, India. This city is in a rich valley in northern India near the foot of the Himalaya Mountains.

6. How would more railroads help India?
7. Why do not people in certain sections of the United States starve when their crops fail?

SOME THINGS TO DO

1. Study the globe to find the best route from Bombay to London. What are the advantages of this route?
2. Collect samples of different kinds of spices. Mount these on paper and label them neatly. See if you can find out whether they are East Indian spices or not.
3. Write the story of an imaginary trip overland from Russia to India.



Thompson

FIG. 344. Harrowing a rice field before planting.

Rice plants need a great deal of water.

In China the rice fields are usually kept flooded until the grain is ripe and ready to be harvested.

Do you know what kind of an animal is being used here to prepare the ground?

Why do the men stand on the harrow?

THE OLD COUNTRIES OF EASTERN ASIA

169. THE FAR EAST

SOME THINGS TO LEARN

1. What is meant by the "Far East."
2. Why certain parts are so densely peopled.

What the Far East is. East of the mountain highland of Asia are several very old countries. The best known are *China* and *Japan*, which for many years would not engage in commerce with Europe or the New World. Both these countries are densely populated.

The resources of the region. The portion of China in which the people are most numerous is a lowland with rich river valleys. Japan is an island kingdom, as is Great Britain and Northern Ireland. In both these regions the warm and moist climate is very favorable for farming. Agriculture furnishes the food for the many millions of people, but the farms are far smaller than the farms we know. They are more like gardens.

In this section, much smaller than our country, live more than four times as many people as are found in the United States. Eastern Asia, including the islands in the Pacific, is generally known as the "Far East," because it is at the extreme eastern

side of Eurasia and far from the shores of western Europe.

170. THE REPUBLIC OF CHINA

SOME THINGS TO LEARN

1. Ways in which China is like the United States.
2. Ways in which China differs from the United States.
3. How tea is raised in China.
4. What we exchange with China in trade.

Wherein China is like the United States.

China is a large country, having about one-third more area than the United States. Although it was ruled for centuries by a king or emperor, it has now become a republic.

Southeastern China has a climate similar to that of Florida. It, too, is on the eastern coast of a continent and is about the same distance from the Equator as that state. It produces warm-country products, such as sugar cane, rice (Fig. 344), tea, and silk. Rice is the chief food of the Chinese in this section, and tea and silk are produced for export. More than a quarter of the raw silk of the world comes from China. The northern coast of China has a climate similar to that of New England. Here the chief crops are grains, millet, peas, and beans. These are used for food, and

beans may be said to be the national dish of north China as rice is that of the south. The western part of the country is high, cold, and barren, and is thinly populated.

China has rich deposits of coal, iron, petroleum, and other rock products, but these deposits have not been worked and developed as in our country. They are riches that some day may make China one of the most important countries in the world.

The farming areas of southern China are densely populated. There are so many people to be fed that the land must be made to produce as much food as possible.

How China differs from the United States. When one travels in the rural districts of China one does not follow railroads or even good roads as in our country. Most of the traveling is done by caravan, or by boat on the rivers and canals. In many cities a two-wheeled cart drawn by a Chinese coolie, or laboring man, or a sedan chair, carried by two or more coolies, takes the place of street cars and automobiles (Fig. 345). In many sections goods are carried on the backs of the laborers or in large baskets hung on a pole (Fig. 346). In some places wheelbarrows are used for carts, and occasionally one may even see a wheelbarrow with a sail. Travel and transportation in China are carried on in this way because the cost of keeping animals to do this work is too great.

China and the United States differ also in the way their cities are built. Because Chinese cities are old and densely populated, the houses are built close together and the streets are very narrow. The lack of sewers and pavements keeps the streets dirty, and the cities very unhealthful. In marked contrast to this are the wide, beautiful streets and tall, graceful buildings of new countries, such as Argentina, Australia, and the United States.

Another way in which China is unlike the United States is that its large rivers flow to



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FIG. 345. A load of cotton on the streets of Shanghai. Notice the size of the load that is drawn on a two-wheeled cart. Why is so much of the labor in China done by men and not by animals or machines?



Ewing Galloway

FIG. 346. Women porters in Hongkong. Not only the men but many of the women in China must work hard. Why are such broad hats worn? Why is their method of carrying the baskets easier than holding them with their hands?

the east, and their deltas form a portion of the lowland bordering the Pacific. The rich deltas of the *Hwang Ho* and *Yangtse Kiang* are really the best farming areas of China, with soils much like those in the cotton-raising region of the lower Mississippi. The *Hwang* is one of the famous rivers of the world because of its great floods that do much damage to life and property. Only a few years ago this river suddenly changed its course, finding a new way to the ocean, several hundred miles from its former mouth.

The Chinese tea plantations. For many centuries China was the chief tea-growing country of the world. As tea is a drink that is much prized in many countries, the

tea-raising countries of Asia are of interest to all of us. A tea plantation yields its first crop of leaves when the plants are about four years old. The tender new leaves of the young shoots are carefully picked and dried and packed for shipment. In China there are four tea harvests each year. The first comes in May and furnishes the finest tea.

Few countries raise tea; hence, the tea countries of eastern Asia find a ready market in other countries for their products. Before the World War, Russia used great quantities of tea. In England tea is used as generally as coffee is in our country. China, which is said to be the birthplace of the tea industry, trades her tea to the western nations, taking manufactured goods in return. Chinese manufactures are rapidly increasing, but not many of the products are exported.

Chinese territories. Within the boundary of China but outside of the republic lie several vast regions with strange sounding names. *Tibet*, *Sinkiang*, *Mongolia*, and *Manchuria* (Fig. 347) are the best known. Tibet is a high, barren country, which only a few people have visited. Mongolia and Manchuria are countries in many ways like northern and western Canada. These great regions are being slowly settled and developed by the Chinese.

171. THE JAPANESE EMPIRE: THE LAND OF THE RISING SUN

SOME THINGS TO LEARN

1. How Japan may be compared to the British Isles.
2. How a small land supports so many people.
3. How silk is produced.
4. What the Japanese do with the silk they raise.
5. Three interesting facts about Chosen.

How Japan compares with the British Isles. The *Empire of Japan* is made up almost entirely of islands lying as close to the eastern coast of Asia as do the British

Isles to the western coast of Europe. Though the area of Japan is a little larger than that of the British Isles, it has only one-half as much agricultural land. This is because Japan is a much more mountainous country than Great Britain.

The Japanese call their country the "Land of the Rising Sun," because it is farther east in the Old World than any other country.

How a poor land supports many people. The highlands which occupy most of the country are thinly populated, but the rich valleys and lowlands swarm with people. The Japanese cultivate their land very carefully, and this makes it possible for the Japanese to raise a large part of their own food, although only about one-sixth of the country can be farmed. The climate of Japan is much like that of eastern North America from Labrador to Florida. Everywhere the rainfall is abundant, and, wherever the land is fertile, farming is carried on successfully (Fig. 348). Cereals are grown in the north, and rice, sugar cane, tea, and cotton in the warmer southern islands.

The Japanese are also expert in manufacturing, and this furnishes work for many of the people. Cotton, silk, and steel mills are operated. In certain sections large cities have grown up because of the modern development of these manufactures. But the Japanese are perhaps best known to us for their many artistic products which require little material but much skill and labor.

Fishing is one of the leading industries of Japan and is an important source of food, as Japan does not have land enough to raise many animals for their meat or milk.

The land of silk. Silk is the best-known product of Japan. The raw silk is spun by silkworms which are raised indoors on tender mulberry leaves (Fig. 349). When the worms have grown to a length of about three inches, they spin a silken cocoon about themselves and change into a hard, brown

chrysalis. After this the cocoons are placed in an oven and heated until the chrysalis is dry. The cocoons are then soaked in warm water and the fine silk thread of which they are made is unwound and reeled. Each cocoon yields about three hundred yards.

The silk industry is well suited to Japan, because much of the work must be done by hand and the country has a large supply of cheap labor. This work is done by women and children, for in a country so crowded as Japan everyone must work.

The Japanese produce a great deal more raw silk than they can use in their factories; so large quantities are sent to the United States to be woven in the silk mills of our eastern states. In return for the raw silk we send cotton, foodstuffs, iron, and steel goods to the Japanese.

Chosen (Korea). *Chosen*, better known as *Korea*, once an independent country, now belongs to Japan. It occupies a large peninsula on the east coast of Asia between the Japan Sea and the Yellow Sea.

Chosen is a little larger than Kansas, and has about ten times as many people. In spite of the fact that the country is hilly and rough, the people are nearly all farmers. Rice, wheat, cotton, beans, and tobacco are the chief crops. Although the country is rich in gold, silver, copper, coal, and iron, mining is not an important industry. The people of Chosen, known as Koreans, differ from the Chinese and Japanese in both language and customs.

172. THE PEOPLE AND CITIES OF EASTERN ASIA

SOME THINGS TO LEARN

1. Some interesting facts about the people of eastern Asia.
2. The location, size, and importance of the leading cities of eastern Asia.

Characteristics of the people. The people of eastern Asia, although differing in many ways, nearly all belong to the yellow race.



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FIG. 347. Loading a boat at Harbin, Manchuria. These people are carrying flour and loading it on a river boat. How do you know this is a river and not an ocean boat?



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FIG. 348. Threshing rice in Japan. This simple machine is certainly very different from the big threshing machines used in our country.



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FIG. 349. Preparing arbors for silkworms. On these trays, called arbors, the silkworms are fed and here they spin their cocoons. Why is silk culture an occupation especially adapted to a country where hand labor is cheap?



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FIG. 350. Transportation on the streets of Shanghai.

How many different kinds of vehicles are shown here? For what is each used?

Why are wheelbarrows used so much for transportation in China?

In what way does this city look like an American city?

With what is the city lighted?

What products are sent out from Shanghai?

The Chinese of southeastern China are mostly agricultural people, but the Chinese of the Tibetan and Mongolian plateaus are nomads who follow their flocks and herds. The Chinese are noted for their industry and for their business ability. In recent years they have learned many of the ways of the white nations; they have sent many students to this country to learn how to make China a great nation. Some of these men are the leaders in the republic.

For many ages the Japanese had little to do with the rest of the world, but within the last half-century they have developed into one of the important industrial nations of the world. They are the most highly educated of the yellow peoples, and are noted for their cleanliness and their love of beauty in both art and nature.

The Koreans kept foreigners out of their country much longer than did China and Japan, and as a consequence the resources of their country have not been developed. For this reason Chosen has often been spoken of as "The Hermit Kingdom."

The leading cities of eastern Asia. China has several cities each with more than a

million people. The capital and third largest city is *Peking* in the northern part. *Hankow*, on the Yangtse Kiang, is the largest Chinese city. Both of these are inland cities. The most important seaport of China is *Hongkong*, a British colony, on a rocky island of the southeast coast. It has an excellent harbor. *Shanghai*, the second city in size, has a fine harbor, and leads all the other cities in trade with the United States (Fig. 350). *Tientsin*, the harbor of Peking, and *Canton* (Fig. 351), near Hongkong, are two other large commercial cities.

Japan has the two largest cities in Asia. *Tokyo* is the capital, and previous to the earthquake (1923) it was the sixth city of the world in size, ranking next to Chicago. It is a growing manufacturing center, with *Yokohama* as its port. Yokohama has a fine harbor and carries on more than half the export trade of the empire. In September, 1923, Japan experienced a severe earthquake, and both these cities were almost destroyed. More than three-fourths of all the buildings in Tokyo were wrecked or burned, and in Yokohama the destruction was even greater. The whole world sent money, food, and



Ewing Galloway

FIG. 351. Houseboats in Canton. Canton is in the densely populated portion of China. Why do so many people of the city live in boats? How are the boats moved about? What suggests that these people do not hurry in doing their work?

clothing, and the cities are being rapidly rebuilt. The capital of Chosen is *Seoul*, with about the same population as Denver.

173. SOME FEATURES OF SPECIAL INTEREST

SOME THINGS TO LEARN

1. Why the Chinese built the Great Wall.
2. Why Fujiyama appears so high.
3. Why so many Chinese live in houseboats.
4. Interesting facts about the Chinese method of writing.

The Great Wall of China. One of the finest Old World monuments is the *Great Wall* of China, extending from near Peking westward almost 1,700 miles (Fig. 352). It was built ages and ages ago to keep out the enemy races of the north.

The wall is twenty-five feet wide and thirty feet high. There are large lookout towers, rising thirty or forty feet higher (Fig. 352). It is built straight across the country, like a road following hills and valleys. Although this wall was built two thousand years ago, much of it is still in good condition.

Japan's sacred mountain. *Fujiyama* is a beautiful snow-capped mountain peak in Japan. This is the sacred mountain of Japan, and the people are very fond of it. One rarely sees a Japanese drawing or painting in which it does not appear. Since it rises about 12,000 feet from the edge of the sea, its full height can be seen and appreciated. Many higher mountains do not rise so high above the land about them.

House boats. China is shut in on the west by mountains, plateaus, and deserts, and on the east by the ocean. The many millions of people must live mostly in the coastal areas and along the rivers. Here they crowd into the cities, using the water as well as the land as sites for houses. In the house boats of Canton alone live more people than are living in Denver (Fig. 351).

Chinese writing. To write in English we use only twenty-six letters or characters, with which we build words. But in the Chinese alphabet one character may mean as much as a whole sentence with us. There are



Ewing Galloway

FIG. 352. The Great Wall of China. Why did the early Chinese build this wall? Why would it afford little protection against enemies today? What were the towers once used for?

about twenty-five hundred characters which one must learn before he can read well.

Recently, however, the Chinese have invented an alphabet similar to ours in which the letters represent different sounds used in the Chinese speech. It requires thirty-nine letters to represent all the sounds in Chinese speech. This change in writing is only one of the many new things which the Chinese are introducing into their country.

SOME RELATED PROBLEMS

1. What three things make Japan a pleasing country to visit?
2. Why are the plains of China so thickly settled?
3. What building material is largely used in Japan? Why is this particular kind of material used?
4. How would more railroads be a help to China?
5. Why is the tea shipped from Asia usually protected by tin foil?
6. Why do many Chinese and Japanese come to the United States to attend college?

SOME THINGS TO DO

1. Collect and arrange an exhibit of Japanese articles. What are some of the characteristic things you have seen painted on articles made in Japan?
2. Arrange a short play in which the people from the different countries of Asia are represented. Let each pupil tell three interesting things about the country which he represents.
3. Show on the globe two possible routes from New York City to Tokyo. Which would be the more interesting? Why?
4. Try to find out about the furnishings of a Japanese home, and tell how they differ from similar furnishings in an American home.



RWBERRY

FIG. 353. A Relief Map of Australia, the Malay Archipelago, and Part of Oceania



FIG. 354. A Physical Map of Australia, the Malay Archipelago, and Part of Oceania



FIG. 356. A population map of Australia. Why do you think so much of Australia is thinly settled?



FIG. 357. A rainfall map of Australia. Near what coast is the heaviest rainfall?

AUSTRALIA AND OCEANIA

174. WHAT THE MAPS SHOW

Problems:

- Why does such a large part of the people of Australia live on such a small proportion of the land? (a) Where are the thinly and the densely peopled areas? (Fig. 356.) (b) Why does central Australia have so few people? (Fig. 357.) (c) Why is the southern part more favorable for white people than the northern part? (d) Where is the rainfall the most favorable? (e) Where are most of the cities found?
- Australia is almost exactly the size of the United States. Why does it have only about one-tenth as many miles of railroads? (a) Why is it not easy to build a railroad direct from Brisbane to Adelaide? (b) How far are the mountains from the east coast? (c) Why is there but one transcontinental railroad? (d) Why is this in the southern part of the continent? (e) Why are there no railroads in central Australia?
- In what ways is Australia similar to the United States? (a) From what European country did the first colonists come to both countries? (b) What city in Australia is about the same distance from the Equator as Philadelphia? Miami? (c) How would you expect the climate of the east coast to compare with that of the eastern United States? (d) What

- crops would you expect to be grown? (e) In what European countries would these crops be sold? (f) Why are the leading ports in the southern part of the continent?
- Why is New Zealand so well suited to farming and stock raising? (a) Why do you think the climate is favorable? Why is the surface favorable? (b) Compare the distance of these islands from the Equator with that of our Pacific states (Fig. 97).
- Why are European nations interested in Australia and the near-by islands? (a) How many European nations own islands shown on the map? (Fig. 355.) What Asiatic nations? (b) What possessions of the United States are shown? (c) What East Indian products are valuable to people of Europe? Why?
- Why do we think of Australia as a far-away country? (a) How far is it from Perth to Singapore? from Sydney to Manila? How far from Wellington to Sydney? from Sydney to San Francisco? (b) Through what bodies of water could one sail in going from Australia to England? At what ports might the vessel stop?

Questions:

- About how far is Australia from Asia? from South America? from Africa?
- Name the states of Australia.
- What large island and what strait are off the southeast coast of Australia?
- How far is it from North Cape to South Cape in New Zealand?

Essential names and places:

Study the maps and be able to point out the following on an unlettered map: Great Dividing Range; Murray-Darling River; Tasmania, New Zealand, Java, Fiji Islands, Sumatra, Philippine Islands; Sydney, Melbourne, Brisbane, Adelaide, Wellington, Auckland.

AUSTRALIA—THE SMALLEST CONTINENT

175. HOW AUSTRALIA DIFFERS FROM OTHER CONTINENTS

SOME THINGS TO LEARN

1. How Australia differs from other continents.
2. Why there are so few large rivers in Australia.
3. Why the interior has so few people.
4. How the climate changes from south to north.
5. Some interesting facts about the plant and animal life of Australia.

Differences in size and surface features.

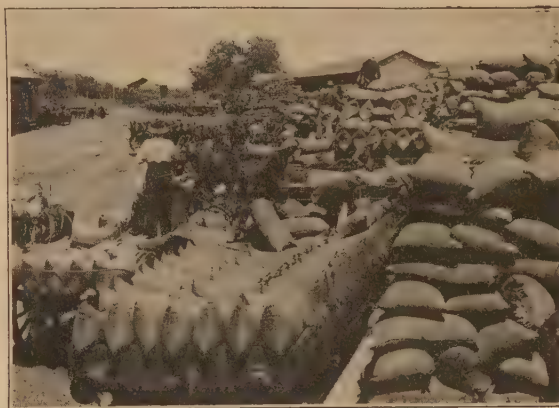
Australia, the smallest of the continents, is about the size of the United States. The Indian Ocean is on the west and south, and the Pacific on the east. *Tasmania*, an island lying off the southeast coast, belongs to Australia (Fig. 358). This continent lies in the Southern Hemisphere, and hence is warmer in the north than at the south.

Australia has little high land, and a greater proportion of low land than any other continent, but a large part of the lowland is thinly settled. Only a small part of the continent is higher than eastern Kansas or Nebraska. This small highland is the *Great Dividing Range* near the east coast. *Mount Kosciuszko*, the highest peak, is not much higher than Mount Washington.

Differences in climate. The northern part of the continent is in the Hot Belt and the remainder is in the South Temperate Belt. Southern and eastern Australia are therefore the sections in which the most people are



FIG. 358. Harvesting wheat in Tasmania. This scene looks much like harvest scenes in certain parts of the United States. Where do you think the harvester was made?



Ewing Galloway

FIG. 359. Shipping wheat in southeastern Australia. Notice that the bags of wheat are being loaded on open cars. What does this tell you of the rainfall during the shipping season?

found. As one goes west it is like going from Georgia to New Mexico, for the climate grows more and more dry all the time.

Farming and manufacturing are found in the moister sections except in the hot north, which is tropical. In the interior grazing is carried on except where the country is too dry. Because so much of Australia is dry the Murray-Darling River is the only long river in this great land.

The native people. Australia was the last of the continents to be developed by white people. They have driven back the native people, as our ancestors drove out the Indians in our country. A few natives still live in

the interior and, although their weapons are simple and crude, they are skillful hunters and live mostly by the chase.

Plants and animals. Australia is an interesting country because many of the animals and plants are different from those in our country. One of the most interesting animals is the kangaroo, which on account of its powerful hind legs can leap over the ground about as fast as a horse can run. There are many different kinds of kangaroos, some as tall as a man and some so small that they are household pets. The fact that Australia has no wolves, foxes, or other flesh-eating animals has helped make it a good sheep region. One of the plants peculiar to Australia is a gum tree, the eucalyptus. This tree is now grown in many warm countries for its lumber. You will find many eucalyptus trees in California, Florida, and the Gulf states.

176. THE WORK OF OUR AUSTRALIAN NEIGHBORS

SOME THINGS TO LEARN

1. Why agriculture and grazing are the chief industries.
2. Of the early value of Australian mines.
3. Why Australia trades mostly with England.
4. The names and locations of the chief cities.

Why agriculture is so important. Eastern Australia is an agricultural region. The northern Hot Belt portion is a sugar country, while the southern section is a fine wheat country (Figs. 358, 359), with some dairying.

Grazing is the greatest industry of the continent. In the regions where enough rain falls to produce a good growth of grass, there are millions of sheep and cattle. For hundreds of miles one may see the herders driving their flocks from place to place, seeking the best grass. *Australia* is the leading sheep-raising country of the world.

The fact that meat can be frozen and shipped long distances in refrigerator cars

or ships also helps the grazing industry in Australia just as it does that of South America and of our own country, for this makes it possible to send meats to the nations of western Europe.

Another reason why Australia is a farming and grazing country is the fact that it is new, and has not yet developed manufacturing to any extent.

The early importance of Australian mines.

It was the discovery of gold in Australia, as in California, that first attracted large numbers of people to the continent. But here also, as in California, the products of the soil have long since exceeded minerals in value. Zinc and gold, however, are still found in paying quantities.

Why Australia trades mostly with Great Britain. Australia is a part of the British Empire and has a government like that of Canada.

We learned in our study of Great Britain that the people there do not raise enough food for their own use. They buy food in many parts of the world, but especially in other countries of the British Empire.

Australia ships great quantities of wheat, flour, butter, beef, and mutton to the home country. England also gets from Australia much of the wool for its great woolen industry.

In return for all these products Australia gets from Great Britain textiles, clothing, machinery, and other iron and steel goods.

The leading cities of Australia. The chief commercial cities are all on the coast. *Sydney* (Fig. 361) and *Melbourne*, fine modern cities on the southeastern coast, are a little larger than Cleveland and St. Louis. *Adelaide*, on the southern coast, has about as many people as Denver, and *Brisbane*, on the eastern coast, has only a few less. *Perth* is the leading city of western Australia. *Canberra* is the capital of *The Commonwealth of Australia*.



FIG. 360. Sydney, New South Wales. Sydney has one of the best harbors in the world. What suggests that this is a busy harbor, and the city a large commercial city?

THE ISLANDS OF THE PACIFIC

177. NEW ZEALAND: THE ISLANDS OF THE ANTIPODES

SOME THINGS TO LEARN

1. Why New Zealand is called the "Antipodes."
2. Three interesting facts about the surface features of New Zealand.
3. What New Zealand contributes to the world in commerce.

Interesting location and physical features.

The people of the British Isles often speak of *New Zealand* as the *Antipodes*. The word means "exactly opposite." The British Isles and New Zealand are on opposite sides of the earth. New Zealand is just as far south of the Equator as northern California or Spain is north of it. And it is nearly as far southeast of Australia as Galveston is southeast of San Francisco. The climate is similar to that of western Oregon, although the northern part is much warmer. Vegetation is abundant everywhere.

The coast is irregular, with many deep bays or fiords. The surface is rugged, and there are many beautiful snow-capped moun-

tains, in the valleys of which numerous glaciers may be seen. New Zealand is thus in some ways like Norway.

North Island has a region very similar to Yellowstone Park, in which there are hot springs and boiling lakes (Fig. 361).

The industries of New Zealand. The favorable climate makes New Zealand a fine pasture and farming country. Sheep raising is carried on extensively, and dairy farming is important. Butter, mutton, beef, and wool are shipped to England, the mother country, in large quantities. As in most newly settled countries, manufacturing is not yet developed except for goods to be used at home.

New Zealand has some large forests, especially on the west or windward side of the mountains. The most important of the forest trees is the *kauri*, from which excellent lumber and a gum are secured. Kauri gum is much used in the making of varnish.

Auckland, with over half as many people as Denver, is the largest city of New Zealand, and *Wellington* is the capital. Both are modern cities with good harbors.



FIG. 361. The geyser region of New Zealand. There are only two other geyser regions in the world like this. One is in Iceland. Do you know where the other geyser region is?

178. OTHER ISLANDS OF THE PACIFIC

SOME THINGS TO LEARN

1. Why many nations are interested in the Pacific islands.
2. Why coaling stations are needed in the Pacific.
3. Why we may expect these islands to become more productive.

Why many nations are interested in the South Pacific. There are many groups of islands and hundreds of small islands in the Pacific Ocean. The Hawaiian and Philippine groups, together with several small islands, belong to our country. England controls a larger number of the Pacific islands than any other country. The most important of these are the *Fiji Islands*. Japan, France, and the Netherlands are the other nations having valuable possessions in the Pacific.

The Pacific Ocean is so large that it takes a long time to cross it. For this reason supply and coaling stations are needed on the way. This is especially true in time of war. The European nations hold many islands, not because of their products, but for protection and as aids to commerce. Many of the islands, however, produce rubber, fruits, and coconuts.

The dried meat of the coconut, known as copra, is an important article of commerce. Small vessels sail to the copra islands and carry the product to large ports in Asia and the East Indies where it is shipped to other ports of the world. Coconut oil is used in many ways and hence the copra business is growing rapidly.

Most of the people of the smaller Pacific islands live very simply, depending largely on the natural products for a living. But many Chinese and Japanese are migrating to these islands, and as a result of the industry and thrift of these immigrants the islands will become more productive and useful.

SOME RELATED PROBLEMS

1. Why Australian cities are located near the coast.
2. Why the cities of Australia are more like the cities of the United States than like those of India or China.
3. Why would it be impossible to irrigate much of Australia?
4. In what way is New Zealand better located than Australia?
5. Do the names of the states of Australia tell you anything of the country from which the first settlers came?

SOME THINGS TO DO

1. In a column, write the names of five nations that own most of the Pacific islands. In a second column, write the names of two island possessions of each.
2. Gather a number of pictures and make a poster, showing some interesting facts about Australasia.

REFERENCE TABLES

Area of the Oceans

(Estimated by Ravenstein)

	AREA IN SQUARE MILES
Arctic.....	5,285,000
Antarctic.....	5,731,350
Indian.....	28,615,600
Atlantic.....	34,801,400
Pacific.....	67,699,630

Area and Population of the Continents¹

(From U. S. Census Report, 1920, Vol. I)

	AREA IN SQUARE MILES	POPULATION
Australia and Oceania.....	3,457,000	9,000,000
Europe.....	3,821,000	475,000,000
Polar Regions.....	4,802,000	
South America.....	7,018,000	61,000,000
North America.....	8,040,000	145,000,000
Africa.....	11,605,000	140,000,000
Asia.....	17,052,000	890,000,000

¹ Based on Statesman's Year-Book and latest official census and estimates.

Area and Population of the Principal Countries of the World

(From latest edition Statesman's Year-Book, latest U. S. Census, Year-Book of the Soviet Union, and Pan-American Bulletin)

	AREA IN SQUARE MILES	POPULATION
Afghanistan.....	270,000	12,000,000
Albania.....	17,374	831,877
Arabia (includes Nejd, Hejaz, Yemen, Asir).....	1,000,000	7,000,000
Argentina.....	1,153,118	9,548,092
Armenia.....	15,240	1,214,391
Austria.....	32,369	6,535,759
Azerbaijan.....	33,970	2,096,973
Belgium.....	11,755	7,744,259
Belgian Congo.....	909,654	8,512,795
Bhutan.....	20,000	250,000
Bolivia.....	514,155	2,990,220
Brazil.....	3,285,318	33,767,342
British Empire.....	13,367,088	449,580,483
United Kingdom.....		
England, Scotland, Wales, Northern Ireland.....	94,633	44,200,000
Irish Free State.....	27,000	3,165,000
Colonies in Europe.....	124	234,000
India and Colonies in Asia.....	2,126,263	332,650,000
Dominion of Canada.....	3,729,665	8,788,483
Newfoundland, Labrador.....	162,734	263,000
Other Colonies in North America.....	18,849	1,424,000
Union of South Africa.....	472,347	6,929,000
Other Colonies in Africa.....	3,359,484	43,468,000
Commonwealth of Australia.....	2,974,581	5,436,000
New Zealand and other islands in Pacific Ocean.....	304,336	2,356,000
British Guiana, Trinidad, Falkland Is.....	97,072	667,000
Bulgaria.....	39,814	5,033,900
Chile.....	289,796	3,754,743
China, Republic of.....	4,279,170	320,653,000
China.....	1,534,420	302,113,000
Sinkiang.....	550,340	2,000,000
Manchuria.....	363,610	12,740,000
Mongolia.....	1,367,600	1,800,000
Tibet.....	463,200	2,000,000
Colombia.....	440,846	5,855,077
Costa Rica.....	23,000	507,193
Cuba.....	44,164	3,368,923
Czechoslovakia.....	54,207	13,613,172
Denmark, Kingdom of.....	63,344	3,434,011
Denmark.....	16,604	3,419,650
Greenland.....	46,740	14,355
Dominican Republic.....	19,332	897,405
Ecuador.....	171,287	1,328,821
Egypt.....	383,000	14,055,000
Estonia.....	18,354	1,110,518
Ethiopia (Abyssinia).....	350,000	10,000,000
Finland.....	132,642	3,495,186

France, Republic of.....	4,135,311	91,627,113
France.....	212,659	39,209,518
Indo-China and other possessions in Asia.....	317,114	22,132,729
Algeria and other possessions in Africa.....	3,559,564	29,672,605
French Guiana and possessions in North America.....	35,906	523,398
Islands in Pacific Ocean.....	10,068	88,863
Georgia.....	25,760	2,372,403
Germany.....	181,257	62,539,098
Greece.....	49,412	6,200,000
Guatemala.....	42,353	2,004,900
Haiti.....	10,204	2,031,000
Honduras.....	44,275	773,408
Hungary.....	35,875	8,274,940
Iceland.....	39,709	98,370
Italy, Kingdom of.....	899,378	40,709,002
Italy.....	119,624	38,755,576
Dependencies in Africa.....	779,754	1,953,426
Japan, Empire of.....	262,205	80,660,231
Japan proper.....	147,657	55,961,140
Chosen (Korea).....	85,228	19,519,927
Taiwan and Pescadores.....	13,888	3,976,098
Karafuto.....	13,934	169,300
Leased territory and mandates.....	1,498	1,038,766
Latvia.....	25,000	1,844,805
Liberia.....	43,000	2,000,000
Liechtenstein.....	65	10,716
Lithuania.....	59,633	2,175,121
Luxembourg.....	999	260,767
Mexico.....	767,198	14,234,799
Monaco.....	8	22,956
Morocco.....	231,500	6,000,000
Nepal.....	54,000	5,600,000
Netherlands, Kingdom of The.....	800,927	56,858,156
Netherlands.....	12,591	7,315,046
Dutch East Indies.....	733,642	49,350,834
Dutch West Indies.....	54,604	192,276
Nicaragua.....	51,660	638,119
Norway, Kingdom of.....	149,964	2,651,297
Norway.....	124,964	2,649,775
Svalbard (Spitsbergen).....	25,000	1,522
Oman.....	82,000	500,000
Panama.....	32,380	442,486
Paraguay.....	61,647	1,000,000
Persia.....	628,000	10,000,000
Peru.....	532,407	5,550,000
Poland.....	149,915	27,184,836
Portugal, Republic of.....	971,754	14,770,844
Portugal.....	35,490	6,032,991
Dependencies in Africa.....	927,292	7,736,700
Dependencies in Asia.....	8,972	1,001,153
Romania.....	122,282	17,393,149
Salvador.....	13,176	1,580,000
San Marino.....	38	12,027
Siam.....	200,148	9,224,000
Spain, Kingdom of.....	323,496	22,750,982
Spain.....	194,800	21,966,641
Colonies in Africa.....	128,696	784,341
Sweden.....	173,105	6,036,118
Switzerland.....	15,940	3,917,800
Turkey, Republic of.....	494,538	13,357,000
Union of the Socialist Soviet Republics.....	8,186,144	138,457,000
Russian S. F. S. R.....	7,597,638	101,706,000
Ukrainian S. S. R.....	105,854	26,178,000
Transcaucasian S. S. R.....	74,499	5,573,000
White Russian S. S. R.....	42,383	1,531,000
Uzbek S. S. R. and Turcoman S. S. R.....	305,770	3,519,000
United States, Republic of.....	3,743,529	117,859,495
Continental United States.....	3,026,789	105,710,620
Alaska.....	590,884	55,036
American Samoa.....	77	8,056
Guam.....	210	13,275
Hawaii.....	6,449	255,912
Panama Canal Zone.....	527	22,858
Philippine Is.....	115,026	10,350,640
Porto Rico.....	3,435	1,299,809
Virgin Is.....	132	26,051
Military and naval service abroad.....		117,238
Uruguay.....	72,153	1,640,214
Venezuela.....	393,874	2,562,334
Yugoslavia.....	96,134	12,017,323

Some Important Cities of the World

(From latest available statistics)

	POPULATION
Addis Ababa, Ethiopia.....	65,000
Adelaide, Australia.....	289,914
Ahmadabad, India.....	274,007
Aleppo, Syria.....	140,000
Alexandria, Egypt.....	444,617
Algiers, Algeria.....	206,595
Amoy, China.....	300,000
Amsterdam, Netherlands.....	712,222
Angora, Turkey.....	35,000
Antananarivo, Madagascar.....	68,507
Antwerp, Belgium.....	302,159
Asmara, Eritrea.....	14,711
Asuncion, Paraguay.....	99,836
Athens, Greece.....	385,026
Auckland, New Zealand.....	129,700
Bagdad, Irak.....	250,000
Baku, Azerbaijan.....	230,000
Bamako, French Sudan.....	28,710
Bangalore, India.....	237,066
Bangkok, Siam.....	550,000
Barcelona, Spain.....	738,108
Barranquilla, Colombia.....	64,543
Basle, Switzerland.....	136,580
Batavia, Java.....	253,818
Beirut, Syria.....	80,000
Belem (Para), Brazil.....	236,402
Belfast, Northern Ireland.....	434,000
Belize, British Honduras.....	12,661
Benghazi, Libya.....	30,000
Beograd (Belgrade), Yugoslavia.....	111,740
Bergen, Norway.....	91,443
Berlin, Germany.....	3,931,071
Berne, Switzerland.....	105,070
Binh Dinh, French Indo-China.....	74,400
Birmingham, England.....	946,980
Bogotá, Colombia.....	166,148
Bologna, Italy.....	218,381
Bombay, India.....	1,175,914
Bordeaux, France.....	267,409
Borford, England.....	290,200
Bremen, Germany.....	286,667
Breslau, Germany.....	553,029
Bridgetown, Barbados.....	13,486
Brisbane, Australia.....	245,015
Bristol, England.....	386,200
Brno (Brünn), Czechoslovakia.....	221,758
Brussels, Belgium.....	794,311
Bucharest, Romania.....	345,628
Budapest, Hungary.....	928,996
Buenos Aires, Argentina.....	2,310,441
Bukhara, Uzbek.....	75,000
Cairo, Egypt.....	700,039
Calcutta, India.....	1,327,547
Callao, Peru.....	60,000
Camaguey, Cuba.....	41,909
Canton, China.....	900,000
Cape Town, U. of S. A.....	207,044
Caracas, Venezuela.....	92,212
Cardiff, Wales.....	226,200
Casablanca, Morocco.....	110,934
Catania, Italy.....	258,030
Cawnpore, India.....	216,430
Cayenne, French Guiana.....	10,146
Changsha, China.....	535,800
Chemnitz, Germany.....	323,153
Chinking, China.....	102,500
Cholon, French Indo-China.....	233,720
Christchurch, New Zealand.....	118,270
Chungking, China.....	593,000
Cochabamba, Bolivia.....	34,281
Cologne, Germany.....	693,266
Colombo, Ceylon.....	244,163
Colon, Panama.....	31,203
Constantinople, Turkey.....	850,998
Copenhagen, Denmark.....	729,214
Córdoba, Argentina.....	156,000
Cracow, Poland.....	183,706
Dairen, China.....	180,700
Dakar, Senegal.....	25,468
Damascus, Syria.....	170,000
Danzig, Free City.....	207,100
Debrecen, Hungary.....	103,186
Delhi, India.....	304,420
Dortmund, Germany.....	319,933
Dresden, Germany.....	608,025
Dublin, Ireland.....	438,000
Durban, Germany.....	272,174
Durazzo, Albania.....	5,000
Dusseldorf, Germany.....	428,909
Edinburgh, Scotland.....	427,300
Erivan, Armenia.....	90,000
Essen, Germany.....	466,133
Fes, Morocco.....	124,500
Florence, Italy.....	260,651

Important Cities—Continued

Forchow, China.....	314,900
Fort de France, Martinique.....	40,000
Frankfurt, Germany.....	458,422
Fusan, Chosen.....	82,393
Geneva, Switzerland.....	127,720
Genoa, Italy.....	322,774
Georgetown, British Guiana.....	56,006
Ghent, Belgium.....	163,738
Gibraltar, Europe.....	16,177
Glasgow, Scotland.....	1,057,100
Göteborg, Sweden.....	229,638
Graz, Austria.....	152,706
Guadalajara, Mexico.....	119,468
Guatemala, Guatemala.....	115,368
Guayaquil, Ecuador.....	100,000
Hague, The, Netherlands.....	391,369
Hamburg, Germany.....	1,053,983
Hangchow, China.....	500,000
Hankow, China.....	1,626,700
Hanoi, French Indo-China.....	115,000
Hanover, Germany.....	414,108
Harbin, Manchuria.....	165,500
Havana, Cuba.....	363,506
Helsinki (Helsingfors), Finland.....	207,954
Herat, Afghanistan.....	121,000
Hobart, Tasmania.....	55,600
Hongkong, China.....	625,166
Huê, French Indo-China.....	60,611
Hull, England.....	296,800
Hyderabad, India.....	404,187
Isfahan, Persia.....	100,000
Jibuti, French Somaliland.....	8,366
Jidda, Hejaz.....	20,000
Johannesburg, U. of S. A.....	288,131
Kabul, Afghanistan.....	100,000
Karachi, India.....	216,883
Katmandu, Nepal.....	80,000
Kazan, U. S. S. R.....	195,300
Kerman, Persia.....	75,000
Kharkov, Ukraine.....	258,360
Kiev, Ukraine.....	403,730
Kingston, Jamaica.....	62,707
Kishinev, Romania.....	114,100
Kobe, Japan.....	608,644
Königsberg, Germany.....	274,575
Kovno, Lithuania.....	92,446
Koweit, Koweit.....	30,000
Kyoto, Japan.....	591,323
Lahore, India.....	281,781
La Paz, Bolivia.....	118,250
La Plata, Argentina.....	151,000
Leeds, England.....	471,600
Leicester, England.....	241,800
Leipzig, Germany.....	660,140
Leningrad (St. Petersburg), U. S. S. R.....	1,067,328
Leopoldville, Belgian Congo.....	6,000
Lhasa, Tibet.....	20,000
Libau, Latvia.....	60,762
Liège, Belgium.....	167,397
Lille, France.....	200,952
Lima, Peru.....	225,000
Linz, Austria.....	102,081
Lisbon, Portugal.....	486,372
Liverpool, England.....	851,800
Loando, Angola.....	20,106
Lodz, Poland.....	451,074
Lome, Togo.....	0,400
London, England.....	7,665,883
Lourenço Marques, Mozambique.....	13,154
Lucknow, India.....	240,566
Lvov, Poland.....	219,388
Lyon, France.....	501,592
Madras, India.....	526,911
Madrid, Spain.....	783,216
Magdeburg, Germany.....	286,752
Managua, Nicaragua.....	27,839
Manaos, Brazil.....	75,704
Manchester, England.....	755,000
Mannheim, Germany.....	242,236
Maracaibo, Venezuela.....	46,706
Marrakesh, Morocco.....	145,000
Marseille, France.....	586,341
Maskat, Oman.....	20,000
Massawa, Eritrea.....	12,645
Matanzas, Cuba.....	41,574
Mecca, Hejaz.....	55,000
Medina, Hejaz.....	5,000
Melbourne, Australia.....	885,700
Meshed, Persia.....	85,000
Mexico City, Mexico.....	1,080,000
Milan, Italy.....	852,922
Mogadishu, Italian Somaliland.....	20,700
Monrovia, Liberia.....	10,000
Monte Carlo, Monaco.....	9,627
Monterrey, Mexico.....	73,528
Montevideo, Uruguay.....	422,499

Montreal, Canada.....	836,304
Moscow, U. S. S. R.....	1,511,045
Mosul, Iraq.....	350,378
Munich, Germany.....	671,548
Nagoya, Japan.....	429,997
Nanking, China.....	395,500
Nanning, China.....	352,000
Naples, Italy.....	784,464
Newcastle, England.....	285,900
Newcastle, Australia.....	95,070
Ningpo, China.....	284,300
Nottingham, England.....	270,300
Nürnberg, Germany.....	384,272
Odessa, Ukraine.....	631,040
Oporto, Portugal.....	203,091
Oran, Algeria.....	146,156
Oruro, Bolivia.....	32,908
Osaka, Japan.....	1,252,983
Oslo, Norway.....	258,483
Ottawa, Canada.....	107,843
Palermo, Italy.....	405,236
Panama, Panama.....	59,458
Paramaribo, Dutch Guiana.....	45,523
Paris, France.....	2,906,472
Peking, China.....	1,300,000
Perth, Australia.....	176,467
Piræus, Greece.....	133,482
Plymouth, England.....	192,900
Phnompenh, French Indo-China.....	90,080
Poona, India.....	214,706
Port au Prince, Haiti.....	125,000
Port of Spain, Trinidad.....	63,954
Porto Novo, Dahomey.....	20,000
Port Said, Egypt.....	91,090
Portsmouth, England.....	232,000
Potosi, Bolivia.....	30,122
Praha (Prague), Czechoslovakia.....	676,657
Puebla, Mexico.....	96,121
Quito, Ecuador.....	80,702
Rangoon, India.....	341,962
Recife (Pernambuco), Brazil.....	238,843
Revel, Estonia.....	130,000
Reykjavik, Iceland.....	20,657
Riga, Latvia.....	337,700
Rio de Janeiro, Brazil.....	1,157,873
Riyadh, Nejd.....	20,000
Rome, Italy.....	720,494
Rosario, Argentina.....	265,000
Rotterdam, Netherlands.....	543,694
Saigon, French Indo-China.....	111,632
St. Johns, Newfoundland.....	38,782
St. Louis, Senegal.....	23,326
Salonika, Greece.....	263,002
Sana, Yemen.....	25,000
San José, Costa Rica.....	55,206
San Luis Potosi, Mexico.....	68,022
San Salvador, Salvador.....	82,000
Santiago, Chile.....	507,296
Santiago de Cuba, Cuba.....	62,083
Santo Domingo, Dominican Rep.....	30,957
São Paulo, Brazil.....	579,033
São Salvador (Bahia), Brazil.....	283,422
Saratov, U. S. S. R.....	268,000
Scutari, Albania.....	32,000
Seoul, Chosen.....	297,465
Seville, Spain.....	210,940
Shanghai, China.....	1,500,000
Sheffield, England.....	525,000
Singapore, Straits Settlements.....	193,000
Smyrna, Turkey.....	98,846
Sofia, Bulgaria.....	154,025
Soochow, China.....	500,000
Stanley, Falkland Islands.....	890
Stettin, Germany.....	250,603
Stockholm, Sweden.....	438,896
Stoke-on-Trent, England.....	278,000
Stuttgart, Germany.....	337,643
Sucre, Bolivia.....	16,194
Swansea, Wales.....	161,700
Sydney, Australia.....	1,012,070
Sydney, Greenland.....	901
Szeged, Hungary.....	110,100
Tabriz, Persia.....	180,000
Takao, Taiwan.....	180,362
Tashkent, Turcoman.....	201,000
Tegucigalpa, Honduras.....	40,000
Tehran, Persia.....	350,000
Tientsin, China.....	800,000
Tiflis, Georgia.....	300,000
Tirana, Albania.....	12,000
Tokyo, Japan.....	2,478,233
Toronto, Canada.....	521,803
Trieste, Italy.....	238,655
Tripoli, Libya.....	60,000
Tunis, Tunisia.....	171,672
Turin, Italy.....	508,075
Valencia, Spain.....	260,339
Valparaiso, Chile.....	182,422

Venice, Italy.....	200,239
Vienna, Austria.....	1,866,147
Vilna, Poland.....	214,600
Vladivostok, Siberia.....	150,000
Warsaw, Poland.....	936,713
Wellington, New Zealand.....	118,400
Wenchow, China.....	202,000
Westham, England.....	317,400
Winnipeg, Canada.....	230,000
Woochow, China.....	350,000
Yekaterinoslav, U. S. S. R.....	228,000
Yokohama, Japan.....	422,942
Zagreb (Agram), Yugoslavia.....	108,338
Zinder, Ter. of the Niger.....	5,851
Zürich, Switzerland.....	204,570

Principal Rivers of the World

NORTH AMERICA

(Based on Longman's Gazetteer of the World and U. S. G. S. Press Bulletin No. 478)

	APPROXIMATE LENGTH IN MILES	APPROXIMATE AREA DRAINED, IN SQUARE MILES
Missouri-Mississippi.....	4,221	1,238,642
Yukon.....	2,300	440,000
Colorado.....	2,000	207,000
Rio Grande.....	1,800	145,200
Columbia.....	1,400	260,000
Saskatchewan-Nelson.....	1,392	360,000
Athabaska-Mackenzie.....	1,100	677,000
St. Lawrence.....	1,034	297,000

SOUTH AMERICA

Amazon.....	3,900	2,320,000
Plata-Paraná.....	2,170	1,200,000
São Francisco.....	1,800	397,600
Orinoco.....	1,550	365,000

EUROPE

Volga.....	2,325	563,300
Danube.....	1,800	315,000
Dnieper.....	1,334	202,200
Don.....	1,153	166,130
Northern Dvina.....	1,100	134,000
Dniester.....	853	16,510
Rhine.....	810	86,600
Elbe.....	720	55,340
Vistula.....	652	73,900
Tagus.....	566	31,864
Oder.....	552	43,300
Loire.....	453	40,756
Rhone.....	504	38,000
Seine.....	425	30,028
Po.....	418	26,800

ASIA

Ob.....	3,200	1,150,870
Yangtse.....	3,100	700,000
Amur.....	2,900	787,000
Yenisei.....	2,800	792,300
Hwang.....	2,700	387,150
Lena.....	2,660	908,980
Mekong.....	2,600	350,000
Indus.....	2,000	360,050
Brahmaputra.....	1,800	360,000
Ganges.....	1,455	397,300

AFRICA

Nile.....	4,000	1,620,000
Congo.....	2,900	1,000,000
Niger.....	2,600	780,000
Zambezi.....	1,600	550,000

AUSTRALIA

Darling.....	1,210	198,000
Murray.....	1,160	270,000

Principal Lakes of the World

NORTH AMERICA

	AREA IN SQ. MILES	ALTITUDE IN FEET
Superior.....	31,810	602
Huron.....	23,010	581
Michigan.....	22,400	581
Great Bear.....	14,000	391
Erie.....	9,940	572
Winnipeg.....	9,400	710
Ontario.....	7,540	246
Great Slave.....	7,100	520
Nicaragua.....	2,975	106
Great Salt.....	2,560	4,218
1 Salt.....		

SOUTH AMERICA

Titicaca.....	3,261	12,500
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EUROPE

Ladoga.....	7,000	55
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ASIA

Caspian Sea ¹	69,383	86 ²
Lake Aral ¹	26,166	160
Baikal.....	13,197	1,562
Balkhash.....	7,115	809
Dead Sea ¹	353	1,293 ²
¹ Salt. ² Below sea level.		

AFRICA

Victoria.....	26,828	3,737
Tanganyika.....	12,355	2,565
Nyasa.....	10,231	1,568
Chad.....	10,400 ¹	850
¹ Variable and gradually shrinking.		

Principal Mountains of the World

NORTH AMERICA

		FEET
McKinley.....	Alaska.....	20,300
Logan.....	Yukon.....	19,850
Hayes.....	Alaska.....	18,800
Orizaba.....	Mexico.....	18,546
St. Elias.....	Alaska-Yukon.....	18,024
Popocatepetl.....	Mexico.....	17,843
Foraker.....	Alaska.....	17,000
Sanford.....	Alaska.....	16,210
Blackburn.....	Alaska.....	16,140
Toluca, Nevada de.....	Mexico.....	15,020
Hubbard.....	Alaska-Yukon.....	14,950
Whitney.....	California.....	14,501
Elbert.....	Colorado.....	14,420
Rainier.....	Washington.....	14,408
Massive.....	Colorado.....	14,404
Blanca.....	Colorado.....	14,390
Longs Peak.....	Colorado.....	14,255
Shasta.....	California.....	14,161
Pikes Peak.....	Colorado.....	14,109

SOUTH AMERICA

Aconcagua.....	Argentina.....	22,979
Cerro Pissis.....	Argentina.....	22,238
Huascarán.....	Peru.....	22,188
Llullaillaco.....	Chile-Argentina.....	22,009
Incahuasi.....	Chile-Argentina.....	21,713
Coropuna.....	Peru.....	21,703
Sajama.....	Bolivia.....	21,386
Nevalo de Cachi.....	Argentina.....	21,320
Illampu (Sorata).....	Bolivia.....	21,274
Ilimani.....	Bolivia.....	21,188
Veladero.....	Argentina.....	20,730
Chimborazo.....	Ecuador.....	20,702
Ojos del Salado.....	Chile-Argentina.....	20,008
Copiapó.....	Chile.....	19,942
Cotopaxi.....	Ecuador.....	19,498
Lincabur.....	Chile.....	19,450
Ollagui.....	Bolivia.....	19,265
El Misti.....	Peru.....	19,200
Cayambe.....	Ecuador.....	19,160

EUROPE

Elbrus.....	Georgia.....	18,468
Mont Blanc.....	France.....	15,781
Monte Rosa.....	Swiss-Italian.....	
	frontier.....	15,217
Pic d' Aneto.....	Spain.....	11,160
Etna.....	Sicily.....	10,758
Galdhöpig.....	Norway.....	8,334
Telpos.....	U. S. S. R.....	5,540
Hekla.....	Iceland.....	5,105
Ben Nevis.....	Scotland.....	4,406
Vesuvius.....	Italy.....	4,012
Snowdon.....	Wales.....	3,560

ASIA

Everest.....	Nepal-Tibet.....	29,002
Godwin Austen.....	India.....	28,205
Kinchinjunga.....	Nepal.....	28,146
Mustag Ata.....	Sinkiang.....	24,480
Demavend.....	Persia.....	18,606
Ararat.....	Armenia.....	16,925
Fujiyama (Fujisan).....	Japan.....	12,395
Hermion.....	Syria.....	9,052

AFRICA

Kilimanjaro.....	Tanganyika.....	19,456
Kenya.....	Kenya.....	17,040
Ras Dashan.....	Ethiopia.....	15,158
Tizi-n-Tamjurt.....	Morocco.....	14,764
Elgon.....	Uganda.....	14,584
Mongo Ma Loba.....	Cameroons.....	13,353
Mont aux Sources.....	Natal.....	11,000

OCEANIA

Carstensz.....	Dutch New Guinea.....	15,964
Mauna Kea.....	Hawaiian Islands.....	13,853
Kimbalu.....	Borneo.....	13,008
Cook.....	New Zealand.....	12,349
Kosciusko.....	Australia.....	7,328

Principal Seaports of the World¹

(From latest statistics available, and U. S. Statistical Abstract)

PORT	COUNTRY	TOTAL COMMERCE
Liverpool.....	England.....	\$4,000,126,000
London.....	England.....	3,683,604,000
New York.....	United States.....	3,062,521,000
Bordeaux.....	France.....	2,256,729,000
Marseille.....	France.....	1,934,609,000
Hamburg.....	Germany.....	1,901,600,000
Antwerp.....	Belgium.....	1,421,460,000
Havre.....	France.....	1,077,826,000
Genoa.....	Italy.....	1,066,631,000
Buenos Aires.....	Argentina.....	1,040,314,000
Calcutta.....	India.....	932,888,000
Kobe.....	Japan.....	829,341,000
Bombay.....	India.....	824,129,000
Singapore.....	Straits Settlements.....	774,888,000
Manchester.....	England.....	761,275,000
Yokohama.....	Japan.....	743,537,000
Shanghai.....	China.....	710,587,000
Hull.....	England.....	633,743,000
Bremen.....	Germany.....	583,020,000
Glasgow.....	Scotland.....	579,420,000
New Orleans.....	United States.....	533,326,000 ²
Montreal.....	Canada.....	488,542,000
Sydney.....	Australia.....	472,604,000
Galveston.....	United States.....	471,769,000 ²
Havana.....	Cuba.....	408,335,000
Melbourne.....	Australia.....	358,535,000
Trieste.....	Italy.....	337,428,000
Santos.....	Brazil.....	331,827,000
Osaka.....	Japan.....	331,312,000
Southampton.....	England.....	324,322,000
Alexandria.....	Egypt.....	313,808,000
Rio de Janeiro.....	Brazil.....	276,531,000
Bristol.....	England.....	261,046,000
Philadelphia.....	United States.....	252,974,000
Manila.....	Philippine Islands.....	238,832,000
San Francisco.....	United States.....	226,240,000
Boston.....	United States.....	225,173,000
Cebu.....	England.....	215,589,000
Buffalo.....	United States.....	213,410,000
Cardiff.....	Wales.....	212,058,000
Naples.....	Italy.....	207,133,000
Dunkirk.....	France.....	179,068,000
Harwich.....	England.....	178,758,000
Leith.....	Scotland.....	167,509,000
Barcelona.....	Spain.....	139,143,000
Montevideo.....	Uruguay.....	123,817,000
Lisbon.....	Portugal.....	113,144,000
Canton.....	China.....	112,829,000
Tientsin.....	China.....	108,363,000
Constantinople.....	Turkey.....	102,960,000
Fiume.....	Italy.....	97,756,000
Callao.....	Peru.....	78,678,000
Belfast.....	Northern Ireland.....	78,192,000
Valparaiso.....	Chile.....	58,444,000
Novorossiisk.....	U. S. S. R.....	45,431,000
Veracruz.....	Mexico.....	37,661,000
Tampico.....	Mexico.....	36,244,000
Antofagasta.....	Chile.....	36,141,000
Windau.....	Latvia.....	31,913,000
Iquique.....	Chile.....	31,784,000
Leningrad.....	U. S. S. R.....	31,416,000
Rostov on Don.....	U. S. S. R.....	31,173,000
Vladivostok.....	Siberia.....	28,233,000
Libau.....	Latvia.....	26,203,000
Bilbao.....	Spain.....	24,358,000
Valencia.....	Spain.....	20,365,000
Nikolaiev.....	U. S. S. R.....	19,315,000
Batum.....	Georgia.....	19,062,000
Cadiz.....	Spain.....	11,948,000
Kherson.....	Ukraine.....	8,767,000
Revel.....	Estonia.....	3,194,000

¹ Statistics for the Tyne ports, England, the St. Lawrence ports, Canada, and the Michigan, Maryland, Virginia, and Washington ports, United States, are grouped and are not given in the list.

² Galveston and New Orleans vie with each other as to rank.

Some Ocean Distances

(After U. S. Hydrographic Office)

NORTH AMERICA

PORTS	NAUTICAL MILES
Boston to Marseille.....	3,716
Boston to Bordeaux.....	3,064
Boston to New Orleans.....	1,940
New York to Liverpool.....	3,107
New York to Havre.....	3,293
New York to Bordeaux.....	3,318
New York to Rio de Janeiro.....	4,770
New York to Buenos Aires.....	5,871
San Francisco to Stockholm.....	9,185 ¹
San Francisco to Punta Arenas.....	6,193
Seattle to Honolulu.....	2,489
Seattle to Nome.....	2,288
New Orleans to San Diego.....	4,276 ¹
Quebec to Glasgow.....	2,558
Quebec to Liverpool.....	2,617
Havana to Liverpool.....	4,116
Havana to New York.....	1,227
Panama to Honolulu.....	4,685
Colon to New York.....	1,074
San Juan to Liverpool.....	3,594

SOUTH AMERICA

Buenos Aires to Liverpool.....	6,233
Rio de Janeiro to Liverpool.....	5,158
Rio de Janeiro to Cape Town.....	3,273
Montevideo to Cape Town.....	3,608
Callao to Honolulu.....	5,161
Guayaquil to Hamburg.....	5,906 ¹
Valparaiso to Honolulu.....	5,919
Punta Arenas to Panama.....	3,943
Punta Arenas to Havre.....	7,235

EUROPE

Liverpool to Cape Town.....	6,080
Liverpool to Melbourne.....	12,519 ¹
Liverpool to Melbourne.....	11,084 ²
Southampton to Boston.....	2,944
Southampton to New Orleans.....	4,622
London to Hongkong.....	9,749 ²
London to Melbourne.....	12,734 ¹
London to New York.....	3,310
London to Gibraltar.....	1,351
Brest to Boston.....	2,806
Hamburg to Rio de Janeiro.....	5,518
Hamburg to Valparaiso.....	7,729 ¹
Copenhagen to Boston.....	3,719
Marseille to Alexandria.....	1,415
Venice to Port Said.....	1,325

AFRICA

Cape Town to Singapore.....	5,631
Cape Town to Adelaide.....	5,794
Cape Town to Wellington.....	6,540
Durban to Tampico.....	8,208
Suez to Aden.....	1,319
Zanzibar to Bombay.....	2,538

ASIA

Shanghai to San Francisco.....	5,505
Shanghai to Honolulu.....	4,330
Singapore to Manila.....	1,370
Singapore to Yokohama.....	2,905
Singapore to Hongkong.....	1,454
Yokohama to Panama.....	7,682
Yokohama to San Francisco.....	4,536
Yokohama to Seattle.....	4,255
Yokohama to Sydney.....	4,375
Aden to Colombo.....	2,096
Aden to Bombay.....	1,660
Colombo to Singapore.....	1,585
Colombo to Batavia.....	1,857
Manila to San Francisco.....	6,221
Manila to Honolulu.....	4,767
Calcutta to London.....	7,974 ²
Calcutta to Marseille.....	6,214 ²
Hongkong to San Francisco.....	6,049

AUSTRALIA

Wellington to Panama.....	6,505
Wellington to Valparaiso.....	5,064
Melbourne to Cape Town.....	6,077
Sydney to Honolulu.....	4,420
Sydney to Hongkong.....	4,497
Sydney to Panama.....	7,674
Auckland to San Francisco.....	5,680

1 By way of Panama Canal.
2 By way of Suez Canal.

Areas and Population of the United States and Its Possessions

(From U. S. Federal Census, 1920, Vol. I)

STATES	DATES OF ADMISSION	LAND SURFACE	WATER SURFACE	POPULATION ¹	STATES	DATES OF ADMISSION	LAND SURFACE	WATER SURFACE	POPULATION ¹
Alabama.....	Dec. 14, 1819	51,279	719	2,526,001	North Carolina.....	Nov. 21, 1789	48,740	3,686	2,857,846
Arizona.....	Feb. 14, 1912	113,810	146	444,708	North Dakota.....	Nov. 2, 1889	70,183	654	641,102
Arkansas.....	June 15, 1836	52,525	810	1,903,048	Ohio.....	Feb. 19, 1803	40,740	300	6,600,146
California.....	Sept. 9, 1850	155,052	2,645	4,316,459	Oklahoma.....	Nov. 16, 1907	60,414	643	2,342,474
Colorado.....	Aug. 1, 1876	103,658	290	1,058,722	Oregon.....	Feb. 14, 1859	95,007	1,092	877,477
Connecticut.....	Jan. 9, 1788	4,820	145	1,606,491	Pennsylvania.....	Dec. 12, 1787	44,832	294	9,613,570
Delaware.....	Dec. 7, 1787	1,965	405	240,274	Rhode Island.....	May 29, 1790	1,067	181	692,794
Florida.....	March 3, 1845	54,861	3,805	1,317,160	South Carolina.....	May 23, 1788	30,495	494	1,826,021
Georgia.....	Jan. 2, 1788	58,725	540	3,138,962	South Dakota.....	Nov. 2, 1889	76,868	747	689,346
Idaho.....	July 3, 1890	83,354	534	522,175	Tennessee.....	June 1, 1796	41,687	335	2,467,679
Illinois.....	Dec. 3, 1818	56,043	622	7,202,983	Texas.....	Dec. 29, 1845	262,398	3,498	5,312,661
Indiana.....	Dec. 11, 1816	36,045	309	3,124,499	Utah.....	Jan. 4, 1896	82,184	2,806	513,711
Iowa.....	Dec. 28, 1846	55,586	561	2,422,915	Vermont.....	March 4, 1791	9,124	440	352,428
Kansas.....	Jan. 29, 1861	81,774	384	1,820,896	Virginia.....	June 25, 1788	40,262	2,365	2,518,589
Kentucky.....	June 1, 1792	40,181	417	2,524,210	Washington.....	Nov. 11, 1889	66,836	2,201	1,538,228
Louisiana.....	April 30, 1812	45,409	3,097	1,918,591	West Virginia.....	June 19, 1863	24,022	148	1,069,324
Maine.....	March 15, 1820	29,895	3,145	790,033	Wisconsin.....	May 29, 1848	55,256	810	2,884,734
Maryland.....	April 28, 1788	9,941	2,386	1,580,268	Wyoming.....	July 10, 1890	97,548	366	235,689
Massachusetts.....	Feb. 6, 1788	8,039	227	4,197,288					
Michigan.....	Jan. 26, 1837	57,480	500	4,395,651					
Minnesota.....	May 11, 1858	80,858	3,824	2,651,306					
Mississippi.....	Dec. 10, 1817	46,362	503	1,790,618					
Missouri.....	Aug. 10, 1821	68,727	693	3,498,143					
Montana.....	Nov. 8, 1889	146,131	866	694,965					
Nebraska.....	March 1, 1867	76,808	712	1,384,703					
Nevada.....	Oct. 31, 1864	109,821	869	77,407					
New Hampshire.....	Dec. 21, 1788	9,031	310	453,603					
New Jersey.....	Dec. 18, 1787	7,514	710	3,680,452					
New Mexico.....	Jan. 6, 1912	122,503	131	388,146					
New York.....	July 26, 1788	47,054	1,550	11,303,296					

STATES	DATES OF ADMISSION	LAND SURFACE	WATER SURFACE	POPULATION ¹
North Carolina.....	Nov. 21, 1789	48,740	3,686	2,857,846
North Dakota.....	Nov. 2, 1889	70,183	654	641,102
Ohio.....	Feb. 19, 1803	40,740	300	6,600,146
Oklahoma.....	Nov. 16, 1907	60,414	643	2,342,474
Oregon.....	Feb. 14, 1859	95,007	1,092	877,477
Pennsylvania.....	Dec. 12, 1787	44,832	294	9,613,570
Rhode Island.....	May 29, 1790	1,067	181	692,794
South Carolina.....	May 23, 1788	30,495	494	1,826,021
South Dakota.....	Nov. 2, 1889	76,868	747	689,346
Tennessee.....	June 1, 1796	41,687	335	2,467,679
Texas.....	Dec. 29, 1845	262,398	3,498	5,312,661
Utah.....	Jan. 4, 1896	82,184	2,806	513,711
Vermont.....	March 4, 1791	9,124	440	352,428
Virginia.....	June 25, 1788	40,262	2,365	2,518,589
Washington.....	Nov. 11, 1889	66,836	2,201	1,538,228
West Virginia.....	June 19, 1863	24,022	148	1,069,324
Wisconsin.....	May 29, 1848	55,256	810	2,884,734
Wyoming.....	July 10, 1890	97,548	366	235,689

TERRITORIES	ORGANIZED	LAND SURFACE	WATER SURFACE	POPULATION ¹
Alaska.....	July 27, 1868	590,884 ²	.....	55,036
District of Columbia.....	March 3, 1791	70 ²	.....	527,880
Hawaii.....	June 14, 1900	6,449 ²	.....	255,912

OTHER DEPENDENCIES	ACQUIRED	LAND SURFACE	WATER SURFACE	POPULATION ¹
Guam.....	Feb. 6, 1899	210 ²	.....	13,275
Panama Canal Zone.....	Feb. 23, 1904	527 ²	.....	23,858
Philippines.....	Feb. 6, 1899	115,026 ²	.....	10,350,640
Porto Rico.....	Feb. 6, 1899	3,435 ²	.....	1,299,809
American Samoa.....	Feb. 16, 1900	77 ²	.....	8,056
Virgin Islands.....	Feb. 19, 1917	132 ²	.....	26,051

¹Estimates, Bureau of Census, March 18, 1926.²Gross area (land and water).

Capitals and Largest Cities of the United States and Dependencies

(All capitals are starred)

POPULATION	CITY	POPULATION	CITY
Aberdeen, S. Dak.....	14,537	Colorado Springs, Colo.....	30,105
Agaña, Guam.....	7,432	*Columbia, S. C.....	41,800
Akron, Ohio.....	208,435	Columbus, Ga.....	45,000
*Albany, N. Y.....	119,000	*Columbus, Ohio.....	285,000
Albuquerque, N. Mex.....	15,157	*Concord, N. H.....	22,167
Allentown, Pa.....	94,600	Council Bluffs, Iowa.....	40,900
Altoona, Pa.....	67,000	Covington, Ky.....	58,500
*Annapolis, Md.....	11,214	Cumberland, Md.....	29,837
Asheville, N. C.....	28,504	Dallas, Tex.....	200,000
*Atlanta, Ga.....	227,710	Davenport, Iowa.....	52,469
Atlantic City, N. J.....	53,800	Dayton, Ohio.....	177,000
Augusta, Ga.....	55,700	Decatur, Ill.....	55,000
*Augusta, Me.....	14,114	*Denver, Colo.....	285,000
Aurora, Ill.....	40,900	*Des Moines, Iowa.....	146,000
*Austin, Tex.....	38,200	Detroit, Mich.....	1,290,000
Baltimore, Md.....	808,000	Douglas, Ariz.....	9,916
Bangor, Me.....	25,978	*Dover, Del.....	4,042
*Baton Rouge, La.....	21,782	Dover, N. H.....	13,029
Bay City, Mich.....	49,200	Dubuque, Iowa.....	41,600
Bayonne, N. J.....	91,000	Duluth, Minn.....	113,000
Beaumont, Tex.....	52,600	Durham, N. C.....	43,900
Berkeley, Calif.....	67,800	East Chicago, Ind.....	47,300
Bethlehem, Pa.....	64,400	East Orange, N. J.....	61,700
Binghamton, N. Y.....	72,900	East St. Louis, Ill.....	72,300
Birmingham, Ala.....	211,000	Elizabeth, N. J.....	95,783
Bisbee, Ariz.....	9,205	Elmira, N. Y.....	49,000
*Bismarck, N. Dak.....	7,122	El Paso, Tex.....	109,000
*Boise, Idaho.....	21,303	Erie, Pa.....	93,372
*Boston, Mass.....	787,000	Evanston, Ill.....	45,100
Bridgeport, Conn.....	143,555	Evansville, Ind.....	95,100
Brockton, Mass.....	65,343	Fargo, N. Dak.....	131,000
Buffalo, N. Y.....	544,000	Flint, Mich.....	137,000
Burlington, Vt.....	22,779	Fort Smith, Ark.....	28,870
Butte, Mont.....	43,100	Fort Wayne, Ind.....	99,900
Cambridge, Mass.....	122,000	Fort Worth, Tex.....	159,000
Camden, N. J.....	131,000	*Frankfort, Ky.....	9,805
Canton, Ohio.....	110,000	Fresno, Calif.....	60,200
*Carson City, Nev.....	1,685	Galveston, Tex.....	49,100
Casper, Wyo.....	11,447	Gary, Ind.....	80,800
Cebu, Philippine Is.....	65,502	Grand Forks, N. Dak.....	14,010
Cedar Rapids, Iowa.....	52,100	Grand Rapids, Mich.....	156,000
Charleston, S. C.....	74,100	Great Falls, Mont.....	24,121
*Charleston, W. Va.....	50,700	Greensboro, N. C.....	48,700
Charlotte, N. C.....	54,600	Greenville, S. C.....	23,127
Chattanooga, Tenn.....	72,200	Hagerstown, Md.....	28,064
Chester, Pa.....	70,400	Hammond, Ind.....	52,300
*Cheyenne, Wyo.....	13,829	Hamtramck, Mich.....	87,800
Chicago, Ill.....	3,048,000	*Harrisburg, Pa.....	84,600
Cicero, Ill.....	65,400	*Hartford, Conn.....	164,000
Cincinnati, Ohio.....	411,000	Haverhill, Mass.....	49,232
Cleveland, Ohio.....	960,000	*Helena, Mont.....	12,037
Colon, Canal Zone.....	31,230	Highland Park, Mich.....	77,000
		Hilo, Hawaii.....	10,431
		Hoboken, N. J.....	68,166
		Holyoke, Mass.....	60,400
		Honolulu, Hawaii.....	83,237
		Houston, Tex.....	138,276
		Huntington, W. Va.....	65,300
		*Indianapolis, Ind.....	367,000
		Jackson, Mich.....	59,700
		*Jackson, Miss.....	22,817
		Jacksonville, Fla.....	96,500
		*Jefferson City, Mo.....	14,490
		Jersey City, N. J.....	318,000
		Johnstown, Pa.....	72,200
		Joliet, Ill.....	41,000
		*Juneau, Alaska.....	3,058
		Kalamazoo, Mich.....	54,500
		Kansas City, Kans.....	117,000
		Kansas City, Mo.....	375,000
		Kenosha, Wis.....	52,700
		Knoxville, Tenn.....	98,800
		Kokomo, Ind.....	38,000
		Lakewood, Ohio.....	59,500
		Lancaster, Pa.....	57,100
		*Lansing, Mich.....	73,200
		Lawrence, Mass.....	93,500
		Lewiston, Me.....	35,500
		Lexington, Ky.....	47,500
		Lima, Ohio.....	47,700
		*Lincoln, Nebr.....	62,000
		*Little Rock, Ark.....	75,900
		Long Beach, Calif.....	97,700
		Los Angeles, Calif.....	576,673
		Louisville, Ky.....	311,000
		Lowell, Mass.....	110,296
		Lynn, Mass.....	104,000
		McKeesport, Pa.....	49,500
		Macon, Ga.....	59,200
		*Madison, Wis.....	47,600
		Malden, Mass.....	52,400
		Manchester, N. H.....	84,000
		*Manila, Philippine Is.....	285,306
		Memphis, Tenn.....	177,000
		Meridian, Miss.....	23,399
		Miami, Fla.....	69,754
		Milwaukee, Wis.....	517,000
		Minneapolis, Minn.....	434,000
		Mobile, Ala.....	66,800
		*Montgomery, Ala.....	47,000
		*Montpelier, Vt.....	7,125
		Mount Vernon, N. Y.....	51,000
		Muncie, Ind.....	43,600
		Muskogee, Okla.....	32,500
		Nashua, N. H.....	28,379
		*Nashville, Tenn.....	137,000
		Newark, N. J.....	459,000
		New Bedford, Mass.....	119,539
		New Britain, Conn.....	69,600
		New Castle, Pa.....	50,700
		New Haven, Conn.....	182,000
		New Orleans, La.....	419,000
		Newport News, Va.....	48,800
		Newton, Mass.....	54,700
		New York, N. Y.....	5,924,000

Capitals and Largest Cities of the United States—Continued

	POPULATION
Niagara Falls, N. Y.	58,300
Nome, Alaska	852
Norfolk, Va.	174,000
Oakland, Calif.	261,000
Oak Park, Ill.	53,500
Ogden, Utah	37,600
*Oklahoma City, Okla.	91,295
*Olympia, Wash.	7,795
Omaha, Nebr.	215,400
Pago Pago, Samoan Is.	568
Pasadena, Calif.	58,400
Passaic, N. J.	69,900
Patterson, N. J.	143,000
Pawtucket, R. I.	71,000
Pensacola, Fla.	25,305
Peoria, Ill.	82,500
Philadelphia, Pa.	2,008,000
*Phoenix, Ariz.	29,053
*Pierre, S. Dak.	3,200
Pine Bluff, Ark.	19,280
Pittsburgh, Pa.	637,000
Pocatello, Idaho	15,001
Ponce, Porto Rico	41,912
Pontiac, Mich.	49,800
Portland, Me.	76,400
Portland, Oreg.	258,288
Portsmouth, Va.	59,900
*Providence, R. I.	275,000
Pueblo, Colo.	43,900
Quincy, Ill.	39,131
Quincy, Mass.	63,000
Racine, Wis.	69,400
*Raleigh, N. C.	24,418

Reading, Pa.	114,000	Springfield, Ohio	70,200
Reno, Nev.	12,016	Stamford, Conn.	41,800
*Richmond, Va.	189,000	Stockton, Calif.	48,500
Roanoke, Va.	61,900	Superior, Wis.	39,671
Rochester, N. Y.	321,000	Syracuse, N. Y.	184,000
Rockford, Ill.	78,400	Tacoma, Wash.	106,000
Rock Island, Ill.	41,000	*Tallahassee, Fla.	5,637
Rutland, Vt.	14,954	Tampa, Fla.	102,000
*Sacramento, Calif.	73,400	Terre Haute, Ind.	71,900
Saginaw, Mich.	73,300	Toledo, Ohio	294,000
St. Joseph, Mo.	78,400	Tonopah, Nev.	4,144
St. Louis, Mo.	830,000	*Topeka, Kans.	56,500
*St. Paul, Minn.	248,000	*Trenton, N. J.	134,000
St. Petersburg, Fla.	26,847	Troy, N. Y.	72,300
St. Thomas, Virgin Is.	7,747	Tucson, Ariz.	20,292
*Salem, Oreg.	17,679	Tulsa, Okla.	133,000
*Salt Lake City, Utah	133,000	Union City, N. J.	63,600
San Antonio, Tex.	205,000	Utica, N. Y.	103,000
San Diego, Calif.	110,000	Vicksburg, Miss.	18,072
San Francisco, Calif.	567,000	Waco, Tex.	44,800
San Jose, Calif.	44,200	Washington, D. C.	528,000
San Juan, Porto Rico	71,443	Waterbury, Conn.	91,715
*Santa Fe, N. Mex.	7,236	Waterloo, Iowa	36,900
Savannah, Ga.	94,900	Watertown, S. Dak.	9,400
Schenectady, N. Y.	93,000	Wheeling, W. Va.	56,208
Scranton, Pa.	143,000	Wichita, Kans.	92,500
Seattle, Wash.	315,685	Wichita Falls, Tex.	40,079
Shreveport, La.	59,500	Wilkes-Barre, Pa.	78,300
Sioux City, Iowa	78,000	Wilmington, Pa.	43,100
Sioux Falls, S. Dak.	25,202	Wilmington, Del.	124,000
Somerville, Mass.	100,000	Wilmington, N. C.	37,700
Spartanburg, S. C.	71,698	Winston-Salem, N. C.	71,800
Spokane, Wash.	22,638	Woonsocket, R. I.	51,100
*Springfield, Ill.	109,000	Worcester, Mass.	193,000
Springfield, Mass.	64,700	Yonkers, N. Y.	116,000
Springfield, Mo.	145,000	York, Pa.	49,400
	42,600	Youngstown, Ohio	165,000

Exports and Imports of the Leading Commercial Countries of the World

(From U. S. Commerce Yearbook and latest statistics available)

COUNTRY	PRINCIPAL IMPORTS	TOTAL VALUE OF IMPORTS	PRINCIPAL EXPORTS	TOTAL VALUE OF EXPORTS
*Alaska	Iron, steel, tin cans, machinery, oil	\$ 32,580,000	Fish, copper ore, furs, fur skins	\$ 56,325,000
Algeria	Cotton cloth, clothing, paper, automobiles	146,308,000	Wine, sheep, iron ore, leaf tobacco, wheat, wheat flour	104,242,000
*Arabia	Cotton textiles, grain, hides, tobacco	23,189,000	Cotton manufactures, coffee, hides, grain, tobacco	20,054,000
Argentina	Iron, steel, machinery, automobiles, cotton cloth, oils	647,471,000	Wheat, corn, linseed, wool, chilled beef, hides	790,206,000
Australia	Machinery, chassis and bodies for motor cars, cotton and linen piece goods, iron, steel	641,160,000	Wool, wheat, butter, frozen meats	608,928,000
*Austria	Coal, coke, cotton and woolen goods, grain, silk	469,223,000	Iron, steel, cotton goods, metals, silk	256,141,000
*Belgium	Coal, coke, wheat and flour, wool, machinery, cotton, diamonds (rough)	816,467,000	Iron, steel, diamonds (cut), coal, coke, cotton fabrics, wool	647,025,000
Bolivia	Cotton cloth, wheat flour, machinery	17,698,000	Tin, silver, and copper ores, rubber	34,287,000
Brazil	Wheat, iron, steel, oil, coal, machinery	231,896,000	Coffee, hides, skins, sugar, cotton	337,237,000
British Guiana and British West Indies	Flour, textiles, clothing, machinery	78,354,000	Petroleum, cacao, coconuts, oranges	72,641,000
British India	Cotton piece goods, iron, steel, sugar, machinery	775,448,000	Cotton, rice, tea, oilseeds, gunny cloth, jute	1,173,218,000
British Malaya	Para rubber, rice, tin ore, cotton piece goods, cigarettes	336,799,000	Para rubber, tin, copra, rice	368,614,000
Bulgaria	Textiles, metals, machinery	40,463,000	Leaf tobacco, corn, eggs, beans	35,693,000
Canada	Coal, coke, iron, steel, machinery, raw sugar	797,929,000	Wheat, paper, wheat flour, lumber, wood pulp	1,044,644,000
Central America	Cotton cloth, refined oils, iron, steel, machinery	71,227,000	Coffee, sugar, bananas, cabinet woods	71,430,000
Ceylon	Rice, cotton piece goods, coal, sugar	99,258,000	Tea, rubber, copra, coconuts, coconut oil	131,839,000
Chile	Cotton fabrics, machinery, tools, iron, steel	112,987,000	Nitrate, copper, iodine, meats, wool	184,318,000
China	Cotton fabrics, rice and paddy, kerosene, cotton, sugar	780,821,000	Raw silk, bean cake, beans, cotton, tea	619,726,000
Colombia	Textiles, metals, foodstuffs, machinery	55,383,000	Coffee, gold, bananas, platinum	57,617,000
Cuba	Cotton manufactures, iron, steel, rice	268,951,000	Raw sugar, tobacco, cigars	421,075,000
Czechoslovakia	Cotton, wool, wheat and flour, livestock, lard, bacon	468,572,000	Cotton and woolen manufactures, refined sugar, glass, glassware, wood	502,837,000
*Denmark	Iron, steel, coal, coke, oil cake and meal	394,711,000	Butter, bacon, eggs, cattle	330,027,000
Dominican Republic	Cotton cloth, iron, steel, rice, machinery	21,581,000	Raw sugar, cacao, leaf tobacco	30,263,000
Dutch East Indies	Cotton cloth, rice, iron, steel, machinery	241,172,000	Sugar, rubber, mineral oils, tobacco, copra	534,817,000
Ecuador	Cotton manufactures, iron, steel, wheat flour, machinery	10,648,000	Cocoa, nuts, coffee, hats, rubber	12,360,000
Egypt	Cotton piece goods, iron, steel, wheat flour, oils, fertilizers	229,853,000	Cotton, cottonseed, cottonseed cake, onions, eggs, rice, sugar	304,455,000
Estonia	Grain, cotton, sugar, coal, coke, flour	20,681,000	Flax, timber, butter	20,207,000
Finland	Rye and flour, sugar, wheat flour, coffee	118,192,000	Battens, planks, rough boards, wood pulp, paper, butter	124,518,000

*Trade of Alaska is with United States only. *Trade of Arabia is that passing through Aden only.
 *In addition to coal and coke, these countries also import or export Briquettes, bricks made from coal dust mixed with pitch.

Exports and Imports of the Leading Commercial Countries of the World — *Continued*

COUNTRY	PRINCIPAL IMPORTS	TOTAL VALUE OF IMPORTS	PRINCIPAL EXPORTS	TOTAL VALUE OF EXPORTS
France.....	Cotton, coal, coke, wool, oilseeds, raw silk, coffee.....	\$ 2,101,743,000	Clothing and millinery, silk, cotton, and woolen fabrics, pearls, iron, steel.....	\$ 2,170,955,000
French Indo-China.....	Cotton fabrics, mineral oils, silk fabrics, machinery, iron, steel.....	66,497,000	Rice, fish, coal, rubber, zinc ore, pepper...	70,225,000
¹ Germany.....	Cotton, wool, wheat and wheat flour, cotton fabrics, coal, coke.....	2,175,971,000	Iron, steel, chemicals, machinery.....	1,556,260,000
² Great Britain and Northern Ireland.....	Cotton, meats, wheat and wheat flour, wool, timber, lumber, butter, sugar, tea	5,653,155,000	Cotton piece goods, coal, coke, iron, steel, machinery.....	4,132,223,000
Greece.....	Wheat and wheat flour, cotton and woolen cloth, sugar, coal, timber.....	142,586,000	Tobacco, currants, raisins, wine, olives...	62,114,000
Haiti.....	Cotton and manufactures of, wheat flour...	14,696,000	Coffee, raw cotton, raw sugar.....	14,176,000
² Hawaii.....	Iron, steel, oil, machinery.....	78,652,000	Raw sugar, pineapples (canned).....	109,889,000
Hungary.....	Cotton and woolen cloth, wood, coal, coke	142,388,000	Wheat and wheat flour, livestock, refined sugar.....	116,497,000
Irak (Mesopotamia).....	Cotton goods, sugar.....	72,000,000	Dates, grain.....	33,500,000
Irish Free State.....	Wheat and flour, clothing, coal, corn, tea.	290,689,000	Livestock, beer, ale, butter, bacon, eggs...	219,756,000
¹ Italy.....	Cotton, wheat, coal, coke, wool, machinery, oilseeds.....	844,948,000	Raw silk, cotton and silk fabrics, fruits, nuts, hemp, cheese, automobiles.....	623,991,000
Japan.....	Cotton (ginned), iron, steel, oil cake, machinery, wood, wool, worsted yarns.....	1,010,551,000	Raw silk, cotton cloth, cotton yarn, silk cloth.....	744,399,000
Latvia.....	Cotton fabrics, sugar, wheat, coal, machinery, rye.....	49,478,000	Flax, boards, planks, butter, linseed.....	32,911,000
Lithuania.....	Textiles, sugar, hardware, leather and manufactures of.....	20,653,000	Wood (sawn), flax, eggs, linseed, horses...	26,658,000
Mexico.....	Cotton piece goods, iron, steel, machinery.	147,696,000	Petroleum, copper ore, henequen, coffee...	345,145,000
² Morocco.....	Refined sugar, cotton fabrics, iron, steel, oils, tea.....	42,391,000	Eggs, barley, livestock, beans, wheat....	30,419,000
¹ Netherlands.....	Oilseeds, coal, coke, wheat and wheat flour, corn, coffee.....	903,127,000	Vegetables, refined sugar, vegetable oils, cotton cloth, cheese, butter.....	634,552,000
New Zealand.....	Motor vehicles, mineral oils, cotton piece goods, wearing apparel.....	214,347,000	Wool, butter, mutton, lamb, cheese, hides and skins.....	220,181,000
Norway.....	Coal, coke, iron, steel, cotton manufactures	215,770,000	Wood pulp, fish, paper, timber, lumber...	148,282,000
Palestine.....	Textiles, cigarettes, live animals, petroleum, barley, flour, rice.....	7,432,000	Oranges, soap, wine, melons, apricot paste, lemons.....	8,598,000
Paraguay.....	Cotton cloth, groceries, oil, machinery....	24,835,000	Quebracho extract, oranges, tobacco.....	6,332,000
Persia.....	Cotton textiles, sugar, tea, rice, live animals	56,000,000	Petroleum, wool, carpets, opium, fruits, gums	67,000,000
Peru.....	Cotton manufactures, iron, steel, machinery, wheat and flour.....	73,829,000	Sugar, cotton, mineral oils, copper bars...	102,842,000
² Philippines.....	Cotton cloth, rice, oil, iron and steel, machinery.....	108,011,000	Sugar, hemp, coconut oil, copra.....	135,345,000
¹ Poland.....	Cotton, machinery, wool, steel, iron.....	285,362,000	Coal, coke, sugar, wood, zinc.....	244,313,000
² Porto Rico.....	Rice, cotton cloth, iron and steel, meats...	87,749,000	Sugar, leaf tobacco, cigars.....	84,729,000
Portugal.....	Coal, cotton, codfish, oils, staves, leather, machinery, automobiles, rice.....	104,616,000	Cork bark, wool, sardines, cacao, beeswax, rosin, fruits, chemicals, wine.....	248,830,000
Romania.....	Cotton cloth, machinery, iron pipes, woolen stuffs, clothing.....	97,323,000	Barley, refined oils, boards of conifers, cattle, corn.....	120,328,000
Siam.....	Cotton fabrics, iron, steel, precious stones, gold leaf, gunny bags, cigarettes.....	56,014,000	Rice, teakwood, sticklac.....	70,473,000
Spain.....	Machinery, automobiles, cotton, chemicals, tobacco manufactures.....	442,192,000	Wines, olive oil, oranges, canned foods, iron ore.....	230,050,000
Sweden.....	Coal, coke, iron, steel, wheat and wheat flour, machinery, coffee.....	371,745,000	Wood (sawn and pulp), machinery, paper, iron, steel.....	331,946,000
¹ Switzerland.....	Silk, coal, coke, cotton, wheat, iron, steel.	452,654,000	Watches, silk piece goods, machinery, cotton embroideries, cotton cloth, cheese...	363,948,000
Syria.....	Cotton goods, flour, sugar, cotton thread, dyes.....	32,838,000	Sesame, oranges, lemons, nuts, silk cocoons, sponges, wool, hides.....	14,595,000
Tunisia.....	Metals and metal manufactures, men's clothing, cotton cloth.....	49,710,000	Phosphate rock, wheat, wheat flour, barley, olive oil.....	33,690,000
Turkey.....	Cotton and cotton goods, foodstuffs, edible oils.....	88,321,000	Tobacco, opium, nuts, figs, raisins.....	41,637,000
Union of the Socialistic Soviet Republics.....	Cotton, paper and pulp, dyes, copper, tin, zinc, wool, rubber (crude).....	74,131,000	Grain, petroleum, forest products, butter...	105,914,000
Union of South Africa.....	Cotton manufactures, machinery, wearing apparel, iron, steel.....	263,350,000	Gold, wool, diamonds, hides and skins...	344,241,000
United States.....	Sugar, raw silk, coffee, rubber, paper, wool and mohair, cotton manufactures, furs, copper, wood pulp, leaf tobacco.....	3,611,000,000	Cotton, mineral oils, wheat and wheat flour, automobiles, machinery, leaf tobacco, animal fats and oils, iron, steel.....	4,591,000,000
Uruguay.....	Mineral oils, textiles, sugar, coal.....	92,716,000	Wool, chilled and frozen beef, hides, skins.	88,060,000
Venezuela.....	Cotton cloth, machinery, iron, steel, wheat flour.....	29,300,000	Coffee, petroleum, cacao beans.....	30,069,000
Yugoslavia.....	Cotton and woolen cloth, iron, steel, cotton yarn, machinery.....	105,403,000	Timber, wheat and wheat flour, cattle, eggs, corn, meats.....	122,287,000

¹ In addition to coal and coke, these countries also import or export briquettes, bricks made from coal dust mixed with pitch.² Trade of Hawaii, Philippines, and Porto Rico is with United States only.³ Trade of Morocco is for French zone only.

SUGGESTIONS FOR COLLATERAL READING

For convenience, an alphabetical list of the individual books referred to in the outline for collateral reading, together with the publisher's name, has been arranged. The outline follows the text in its divisions into Part I, Home Geography; Part II, World Relations; Part III, The Continents. In the readings bearing upon the continent of North America, a subdivision covering the United States has been made. All references are given by pages, and when no reference to pages is made, the book as a whole is to be read.

LIST OF BOOKS

Besides individual books, these geographical series are recommended: "Children of Other Lands" (Lothrop, Lee & Shepard Co.); "Little Journeys" (A. Flanagan Co.); "Little People Everywhere" (Little, Brown & Co.); "Our Little Cousins" (L. C. Page & Co.); "Peeps at Many Lands" (Adam and Charles Black); Dutton's "World at Work Series" (American Book Co.); "Around the World" (Silver Burdett & Co.).

Allee, W. C. and Allee, M. H., *Jungle Island* (Rand McNally & Co.)

Allen, Nellie B., *How and Where We Live; The New Europe; North America* (Ginn & Co.)

Andrews, Jane, *Seven Little Sisters; The Stories Mother Nature Told Her Children* (Ginn & Co.)

Ayrton, Mrs. M. C., *Child-life in Japan* (D. C. Heath & Co.)

Babson, Roger W., *A Central American Journey* (World Book Co.)

Beeby, Daniel J. and Beeby, Dorothea, *How the World Grows Smaller* (Charles E. Merrill Co.)

Bowman, Isaiah, *South America* (Rand McNally & Co.)

Brooks, E. C., *The Story of Corn; The Story of Cotton* (Rand McNally & Co.)

Browne, Edith A., *Sugar* (Peeps at Industries Series) (Adam and Charles Black)

Carpenter, Frank G., *Around the World with the Children; How the World is Clothed; How the World is Fed; How the World Is Housed* (American Book Co.)

Chamberlain, James F., *How We Are Clothed; How We Are Fed; How We Are Sheltered; How We Travel* (The Macmillan Company)

Chamberlain, James F. and Chamberlain, A. H., *Africa; Asia; Europe; South America* (The Macmillan Company)

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Dakin, Wilson S., *Great Rivers of the World* (The Macmillan Company)

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Fairgrieve, James and Young, Ernest, *Homes Far Away; Children of Many Lands* (D. Appleton & Co.)

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Huntington, Ellsworth, *Asia* (Rand McNally & Co.)

Ingersoll, Ernest, *The Book of the Ocean* (Century Co.)

Knowlton, Philip A., *First Lessons in Geography* (The Macmillan Co.)

Lane, M. A. L., ed., *Industries of Today; Under Sunny Skies* (Youth's Companion Series) (Ginn & Co.)

Merrill, F. A., *Home Geography; The Industries of Man; Our Country; Our Occupations* (A. C. Webb & Co.)

Miller, Olive Thorne, *Little People of Asia* (E. P. Dutton & Co.)

Mirick, George A., *Home Life Around the World* (Houghton Mifflin Co.)

Mitchell, Mrs. A. F., *Paz and Pablo* (World Book Co.)

Mitton, G. E., *Round the Wonderful World* (G. P. Putnam's Sons)

Moncrieff, A. R. H., *The World* (Peeps at Many Lands Series) (Adam and Charles Black)

Monroe, W. S. and Buckbee, Anna, *Our Country and Its People* (Harper and Brothers)

Morris, Charles, *Home Life in All Lands*, Books I and II (J. B. Lippincott Co.)

Nida, Stella H., *Panama and Its "Bridge of Water"* (Rand McNally & Co.)

Northern Europe (Youth's Companion Series) (Ginn & Co.)

Perdue, H. Avis, *Child Life in Other Lands; How Other Children Live* (Rand McNally & Co.)
 Perkins, Lucy Fitch., *The Filipino Twins* (Houghton Mifflin Co.)
 Rocheleau, W. F., *The Geography of Commerce and Industry* (Educational Publishing Co.)
 Saint Nicholas, *Travel Stories* (Century Co.)
 Schwatka, Frederick, *The Children of the Cold* (Educational Publishing Co.)
 Shaw, Edward R., *Big People and Little People of Other Lands* (American Book Co.)
 Shepherd, Edith P., *Geography for Beginners*, Books I and II (Rand McNally & Co.)
 Shillig, Elnora E., *The Four Wonders* (Rand McNally & Co.)
 Smith, J. Russell, *Human Geography*, Book I (John C. Winston Co.)

Smith, Mary E., *Eskimo Stories; Holland Stories* (Rand McNally & Co.)
 Starr, Frederick, *Strange Peoples* (D. C. Heath & Co.)
 Stefansson, Vilhjalmur, and Schwartz, J. A., *Northward Hol* (The Macmillan Co.)
Strange Lands Near Home; The Wide World (Youth's Companion Series) (Ginn & Co.)
 Tappan, Eva M., *The Farmer and His Friends; Travelers and Traveling* (Houghton Mifflin Co.)
 Verrill, A. Hyatt, *The Ocean and Its Mysteries; Rivers and Their Mysteries* (Duffield & Co.)
 Werthner, William B., *How Man Makes Markets* (The Macmillan Company)
 Winslow, I. O., *Distant Countries; The Earth and Its People; Europe; Our American Neighbors; The United States* (D. C. Heath & Co.)
 Yule, Emma S., *In Kimono Land* (Rand McNally & Co.)

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INDEX AND PRONOUNCING VOCABULARY

Authority for pronunciation: *Webster's New International Dictionary*.

Key to pronunciation: *ā*, as in *ale*; *ā*, as in *senāte*; *ā*, as in *cāre*; *ā*, as in *ām*; *ā*, as in *find*; *ā*, as in *arm*; *ā*, as in *āsk*; *ā*, as in *sofā*; *ē*, as in *ēve*; *ē*, as in *crēte*; *ē*, as in *ēnd*; *ē*, as in *novēl*; *ē*, as in *cinder*; *ī*, as in *ice*; *ī*, as in *ill*; *ō*, as in *old*; *ō*, as in *ōbey*; *ō*, as in *lōrd*; *ō*, as in *ōdd*; *ō*, as in *cōnnect*; *ō*, as in *sōft*; *ōō*, as in *fōod*; *ōō*, as in *fōot*; *ou*, as in *thou*; *th*, as in *thin*; *th*, as in *this*; *ū*, as in *pūre*; *ū*, as in *ūnite*; *ū*, as in *ūrn*; *ū*, as in *stūdy*; *ū*, as in *circū*; *κ* for *ch*, as in *German* *ich*, *ach*; *η* (like *ng*), for *n* before the sound *k* or hard *g*, as in *baḡk*. *N* indicates the nasal tone, as in *French*, of the preceding vowel; *tū* for *tu*, as in *naṡre*, indicates the elision or reduction of a vowel to a mere vocal murmur; *g*, as in *go*.

The following abbreviations are used:

Alb. Albanian
Bulg. Bulgarian
Dan. Danish
Du. Dutch
Eng. English
Est. Estonian

Finn. Finnish
Fr. French
Ger. German
Gr. Greek
It. Italian
Jap. Japanese

Lett. Lettish
Lith. Lithuanian
Nor. Norwegian
Pol. Polish
Port. Portuguese
Rom. Romanian

Russ. Russian
Serb. Serbian
Span. Spanish
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Turk. Turkish

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